ACCS

See Page 15

MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

ROLE OF ELECTRONICS IN TRANSPORT

See Page 3

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CURRENT TOPICS

New Trade for Boston

AFTER careful consideration of the advantages offered, a London firm of Netherlands lager beer suppliers, Z.H.B., Limited, has decided to use the port of Boston, Lincs, as its main importing centre. Among the reasons are the lower handling charges compared with London; moreover, Boston is considered an ideal distribution point. Mr. E. H. Van Der Togt, managing director of Z.H.B., states that the beer will be carried from Rotterdam in special plastics lined stainless steel containers which have been designed by his company after many years of research. One problem to be overcome, he said, was to avoid temperature variation and loss of pressure during road and sea transit. The unit containers will each carry about 900 gallons of lager; four units will make a full vehicle load. They will be delivered to the loading point by special articulated road trailers, and will be off-loaded onto similar vehicles at Boston. This degree of bulk carriage offers a number of advantages over the method of shipping lager in crated bottles, since bottles account for three-quarters of the weight carried. Mr. Van Der Togt is confident that it is better to use a number of units as opposed to one large container, because it is easier and of course cheaper thus to make up a desired quantity for delivery to a brewery. Higher charges per gallon might be incurred in shipping one large container only partly full. The shipments will be handled by Shipping and Coal, Limited, a company which maintains a twice-weekly service into Boston from the near Continent, using the motorships *Gaasterland* and *Fleverland* of 375 and 388 gross tons respectively. This company is to construct a new office building at Boston because of the increased traffic at the port. Z.H.B. has been shipping its products through Felixstowe for some time now and will continue to use it as a secondary port.

By Road to Milan

SOON after D-day, when watching tank landing ships being loaded with lorries and railway wagons at Southampton, we thought of the wide range of peacetime activity opened by such vessels. Few saw likewise, but Col. Frank Bustard of the Atlantic Steam Navigation Company was one and by 1946 a drive-on-drive-off service for military equipment was being operated under his direction between Tilbury and Hamburg with three wartime LST's. The first commercial traffic venture, between Preston and Larne, began in 1948. Since then new ships, such as *Bardic Ferry* and *Ionic Ferry*, have been specially built for the service and two new vessels, still larger, are to be delivered this year, one in 1961, at a cost of £800,000 each. There is a Tilbury—Antwerp service which began in 1957 and next month Tilbury —Rotterdam sailings will begin. Introduced this week by Colonel Bustard's son, Mr. John H. Bustard, now director and general manager of the undertaking, *Ferry Load* is a 33-minute colour film, beautifully produced by Edgar Anstey for British Transport Films; it illustrates the functioning of the service and, in particular, how a rush job was taken from London to Milan to beat the clock. The workaday world is agreeably intermixed with night shots on the ferry and colourful scenes as the precious load makes its way through Frankfurt and over the Brenner Pass into Italy, arriving just as desired by the customer. Copies in either 16-mm. or 35-mm. versions may be borrowed from the Atlantic Steam Navigation Company, 25 Whitehall, S.W.1, or from the B.T.C. film library.

Instrument Exhibition in Moscow

RECENTLY Mr. Peter Schilling, chairman of the export committee of S.I.M.A. (Scientific Instrument Manufacturers' Association of Great Britain), signed a contract in Moscow under which 34 British scientific instrument makers will show and demonstrate their latest equipment in Moscow at the Polytechnic Museum from June 18 to 29. The exhibition, which is entirely financed by the industry itself through the charges to the exhibitors, is believed to be the first British collective private enterprise exhibition ever to be held in Moscow. The exhibition contractor not only has to mount the exhibition but is also responsible for the packaging and shipping of the exhibits and the personal travel of the exhibitors' staff. In addition, British electricians, signwriters, carpenters, labourers and executive control staff must be sent, together with the stands and furniture and all acccessories down to the last detail. In this instance, S.I.M.A. finds itself in the unusual position of an exhibition contractor, since the agreement is between S.I.M.A. and the U.S.S.R. All Union Chamber of Commerce. Although S.I.M.A. has participated in many overseas exhibitions, financial responsibility has hitherto rested with the main organisers of trade fairs or specialised international exhibitions. The Russians are said to be very interested in many of the advanced types of instrumentation which exhibitors will be showing and have agreed to consider purchasing those which they require at the exhibition.

Combustion Engine Conference

DUE to be held in Copenhagen in June, 1962, the sixth International Congress on Combustion Engines will have as its theme recent developments with diesel engines and gas turbines of above 3,000 h.p. and with gas engines of above 1,500 h.p. While the theme is restricted to higher horsepowers, it is expected to produce technical papers from engineers in most of the C.I.M.A.C. countries and it is hoped that the United Kingdom will be able to repeat the notable contribution which it made to the 1959 congress. Intending authors are asked to forward their particulars and a résumé of the paper to the Hon. Secretary of the British National Committee, C.I.M.A.C., 6 Grafton Street, London, W.1, not later than November 1 next. The résumé and a synopsis, not exceeding two typed pages, complete with a list of probable figures, graphs and tables, should be in English and French and be sufficiently detailed to indicate the likely scope of interest of the paper within the framework of the congress theme. As well as having a relation with the general theme of the congress, papers should contain new matter dealing with problems of installation, transmission or utilisation of power, preferably those met with in actual practice; theoretical studies or tests on cycles of working, scavenging, supercharging, injection, combustion, heat exchanging or heat recovery and means of carrying them out; investigations or tests on the shape, dimensions and design of engine and turbine components; study of breakdowns, with technical and scientific explanations and remedies; methods of test or test results of a definitely novel character; or technical or financial results achieved on running at site, supported by actual case histories.

Satisfying Altruism

FEELING very strongly that large industrial companies have wider responsibilities than those to their shareholders, to their staff and to general commercial policy, the managing director of the National Benzole Co., Limited, Mr. Alan Robertson, took particular pleasure on Tuesday night in introducing the two latest films produced for his company by Random Film Productions in most effective Eastmancolour. *A Journey into the Weald of Kent* is the second in the "Our National Heritage" series—the first, *Beauty in Trust*, dealt most successfully with the work of the National Trust and a third, to be made this year, hopes to do equally well by the National Parks. The present film should certainly help to give people a keener appreciation of the beauties of the countryside and its historic buildings. The film is available in a 16-mm. version from the National Benzole Co., Limited, Mercury House, Knightsbridge, S.W.7. The other one, *The Scottish Veteran Car Rally*, will be available in due course, but may first be generally released on a cinema circuit. Despite much rain, this rally, which was the first of its kind in Scotland, was a great success, and so is the film. The colourful vehicles are seen in a variety of lovely country and there are also some most interesting shots of some of the late Mr. John Sword's collection of vintage cars.

Fate of Potteries Railway

WITH a Sunday excursion from Hookagate to Llanymynech organised by Stephenson Locomotive Society members, the last days of the Shropshire and Montgomeryshire Railway have arrived. As there was no public traffic on the Criggion branch it was closed on and from January 4, while the official last day on the main line from Shrewsbury to Llanymynech was February 29. Since the war a dual Western Region and military administration has been in force, but until then the railway had been independent. Its builder, Richard Samuel France, a limestone quarry owner, brought it to birth as the Potteries, Shrewsbury and North Wales Railway. Aligned to connect the Midlands with North Wales and the will-o'-the-wisp Irish packet port of Porthdynllaen with a bold route including a two-mile tunnel under the Berwyns, the part that was completed before money ran out crossed a particularly quiet countryside and there were only a few occasions on which revenue really exceeded expenses. After a false start in 1866 the line was open from December, 1868, until 1880, when the Board of Trade, worried by the lack of maintenance, ordered its closure. The system lay derelict for 30 years until the late Colonel H. F. Stephens obtained possession to reconstruct and operate it as the Shropshire and Montgomeryshire Light Railway under the Act of 1896. It reopened on April 14, 1911; the Criggion branch, giving access to the granite quarries, came into service again on February 21, 1912, for parcels and freight and for passengers later in the year. Alas, high hopes were not fulfilled and passenger working ceased on November 6, 1933, that on the Criggion branch already having been curtailed short of the decrepit bridge over the Severn. Freight traffic also dwindled and only wartime military depots prolonged its life, although it came under the aegis of the Railway Executive Committee; under the 1947 Act the B.T.C. acquired the business for a nominal figure.

Riding on Air

THE Hovercraft has come in for attention this week from two directions. In the House of Commons Mr. Duncan Sandys, Minister of Aviation, has expressed a firm view that it is no hybrid beast, compounded of lorry, ship and flying machine, but that it is definitely an aircraft. Mr. Ernest Marples, Minister of Transport, has shown his personal interest in guided units of this type running over concrete tracks much in the form of a railway and attaining very high speeds—perhaps 500 m.p.h.—and riding superbly on their own cushions of air. He puts the development period at 10 to 15 years. He may be optimistic—the Ford people in America have been looking at it for quite a time—but our own progress towards what is wanted might be quite rapid. The guiding of such a machine might present problems. When all have been solved the effect might be similar to that of the Bachelet levitated railway, demonstrated in London in 1913, in which eddy currents put the car in the air and electro-magnets provided the traction. This, declared Monsieur Bachelet, was the way to eliminate rolling friction and achieve high speeds. But, of course, at high speeds it is air resistance which becomes a formidable factor in absorbing power; the resistance of steel-tyred wheels on steel rails can be quite small. The *Daily Mail* is worried about the fate of railway modernisation in the light of possible Hovercraft developments. Electric traction on railways will still be a good investment, it may be assured.

Luncheon to Sydney Hearn

FRIENDS in the transport and travel industries gave a luncheon in honour of Mr. Sydney Hearn last week to mark his retirement from railway service as assistant general manager, Eastern Region. Major-General G. S. Szlumper, presiding, passed on good wishes from the conference of regional general managers and said that as far as he was concerned the best day's work he ever did was when he retired. He referred to Mr. Hearn's career and distinctions, including the fact that he was the first traffic trainee appointed by the Great Western Railway. An oil painting was presented to Mr. Hearn who, in his reply, said it was sometimes asked why he had not joined the Royal Navy, thus following a family tradition. The answer was that at the age of eight he was taken to Plymouth North Road to see the arrival of the train which then made the longest nonstop journey in the world; then he saw the bridge at Saltash and railways so filled his mind that when he was asked at school by a headmaster keen on astronomy to say something about the Great Bear he got into trouble for saying that *The Great Bear* was a Pacific locomotive. There was a fascination in transport "which forces us to dedicate our lives to giving the best possible service—so I am proud now that despite my love of the Senior Service I became a railwayman." He particularly thanked Mr. Shirley James, "that Peter Pan of all Pans," who had flown back from Athens to be at the luncheon, and it was good to see there his old chief, Mr. Gilbert Matthews.

LEADING FEATURES IN THIS ISSUE

	PAGE
Portrait	
The late Mr. John C. Sword, M.Inst.T.	9
Special Articles	
Trade and Transport in Europe ..	2
Electronics in Transport: Limitations and Potentialities. By G. H. Hinds	3
Railway Wagons: Use and Misuse. By F. C. Margetts	5
Two-Tier Car Transporter Wagons for W.R.	5
Activity at British Airports in 1959	6
B.T.C. London Chemical Laboratory: First Centre for Investigation and Research	10
Some Aspects of the Short Sea Trade: 2—Present and Future Developments. By S. A. Claydon	11
Glass Fibre Bus Bodywork	12
New Refreshment Room at Victoria	12
Commercial Vehicle Test: No. 469—Commer ¾-Ton Forward-Control Diesel Van	13
Major London Roads Improvements: Blackwall Tunnel and Hyde Park	14
Modern Airways Section	
The Progress of P.I.A.: 2—Scope of Developing Operations	7
Regular Features	
Commercial Aviation	9
Financial Results	16
Forthcoming Events	12
Important Contracts	16
In Parliament	9
Letters to the Editor	10
Lorry, Bus and Coach News	4
News from all Quarters	8
News Summary	2
Shipping and Shipbuilding	16
Social and Personal	15

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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements.

Trade and Transport in Europe

THE opening of trade talks in Paris on March 29 between the officials of 20 nations and of the Economic Commission for Europe gives rise to consideration of the possibility of a common transport policy, a question which has been under consideration ever since 1947, when the inland transport committee of the E.C.E. was given the task of promoting "agreement between Governments on long-term inland transport policy in Europe." Its initial proceedings gave rise to a wide series of discussions on the subject of transport co-ordination among international organisations interested in the subject, and a notable development was the setting up of the European Conference of Ministers of Transport. The vast sums paid on the rehabilitation and modernisation of railways after the war seemed only to result in heavier deficits, and in 1956 one of the first tasks of the E.C.M.T. was to examine the financial situation of the railways. A comprehensive report on this subject was approved in 1957 by the Ministers of 17 countries, its value being greatly enhanced by consideration and recognition of the views of both users and carriers, as represented by the International Chamber of Commerce and the national unions of railways, road transport and inland navigation respectively, as well as of the trades unions through the International Transport Workers Federation. Whilst there was general agreement that the causes of railway deficits were much the same in different countries there was complete disagreement on remedies and their application. Since then there has been much clarification and exchange of ideas, particularly in efforts to find the best division of function between the different forms of transport.

Public or Commercial Service?

TODAY Europe is faced with a situation in which six countries have already set their course towards a Common Market and seven others, including Great Britain, towards a free trade association. The six are seeking a common transport policy, and unless new barriers to transport, and so to trade, are to be created, this move towards a common policy is bound to involve all western Europe. This interesting situation was examined by Brigadier A. E. M. Walter in a recent address to the Scottish Section of the Institute of Transport when he spoke with authority as head of the International Inland Transport Branch of the Ministry of Transport. He considered that the first of the major issues to be resolved was whether transport is to be regarded as a public service or a commercial enterprise, a question to which attention was drawn in the aforementioned report on the financial situation of the railways, and one indeed which is exercising minds in this country at the present moment. He knew of no country which genuinely and fully applies the idea of its railways being regarded as a purely commercial enterprise. On the other hand, there are signs of the possible abandonment of the notion of transport as a public service in aid of industry. The Treaty of Rome, which set up the Common Market, prohibited the use of rates to subsidise industries; it also prohibited their use to discriminate between traffics on grounds of nationality of origin. Already in several countries railways are being compensated for public services which they are required to provide or for which they are obliged to charge unremunerative rates.

Present Controls

IT is not unlikely, therefore, that in the final analysis transport in Europe will be regarded as a commercial service with the full freedom of a commercial enterprise, but with the proviso that the carriers would be required to undertake certain public services as agencies of Governments. Under such a system, Brigadier Walter pointed out, the carriers would sell goods and passenger services for commercial reasons at profitable and uncontrolled rates and would also provide certain public passenger services at controlled rates for which they would be fully compensated. The freedom to buy and sell transport services he regarded as another major issue. Present restrictions on the volume of rail and inland water transport are directed to prevent reductions rather than increases in services while the volume of road transport for hire and reward is closely regulated by licensing but nevertheless is growing rapidly. In some countries the number of licences to be granted in any year is pre-determined, but the size and axle-loading of vehicles is increasing, and with the extended use of trailers a much greater volume of work is done for the same total number of licences. In other countries the numbers of vehicles in the different categories are decided regionally and, the system of control being more flexible, there is greater chance of balancing local demand and supply. Transport on own account (by C-licence in this country) is generally free and licences are granted automatically, even in those countries where certain conditions have to be fulfilled. In Western Europe there are from seven to eight times as many vehicles operating on own account as there are for hire and reward, a fact which explains attempts now being made to impose restrictions on long-distance operation of the former.

Problem of Charging

THESE complications bedevil the efforts of the European countries towards greater integration. Attempts to remove customs barriers to enable goods to move freely across frontiers could be frustrated if the transport services themselves cannot move freely, as is the case today. If, however, transport were to be regarded as a purely commercial enterprise then restrictions on the sale of transport services within countries would not be necessary and there could be full freedom to export and import these services across frontiers in the same way as the goods themselves. A third problem lies in the existing regulation of charges, which varies as between modes of transport. The railways are closely regulated in this respect. With the exception of Great Britain and the Netherlands railway rates must be published and there must be no undue preference; the same conditions generally apply to the inland waterways. On the other hand, except in Germany, there is no control over the rates charged for road transport. These varying conditions for domestic freight operation give rise to difficulties with international transits; in that sphere there is much less control of rates, these being generally based on supply and demand. What is to be the outcome? Those who favour greater control of rates argue that unless the rates by all forms of transport are fixed, published and made applicable to all traffic there will be no means of checking whether rates are being used to overcome the prohibitions of the Rome Treaty. On the other hand, those who favour greater freedom argue that if price control is in the hands of the carriers and the prices are determined by commercial considerations there is less risk of the rates being used to subsidise either producer or consumer. This question of control is the main issue which must be decided before a common transport policy in Europe can be fully developed and implemented.

NEWS SUMMARY

HYDRAULIC lifts used for some years only in peak hours to supplement the electric lifts at Liverpool James Street and Birkenhead Mersey Square stations, to which Mersey and Wirral lines electric trains attract heavy traffic, are to be replaced by high-speed electric lifts, adding 2,500 pasengers an hour to the capacity.

The Garden Room self-service restaurant has been opened at Victoria Station, London (See page 12.)

The Minister of Transport has decided that the proposal of the British Transport Commission to purchase an interest in Silver City Airways is inopportune in present circumstances.

A bus with a body practically all of glass fibre polyester resin materials (see page 12) has been produced on a Bristol chassis by Eastern Coach Works for use by Tilling companies.

Radical changes are to be made to improve facilities for management and commercial studies by the Minister of Education.

A survey by the Electric Vehicle Association shows that two out of every three vehicles used for internal transport in electrical manufacturers' works are battery-operated.

In view of the impending transfer of Bristol Aircraft, Limited, to the newly-formed British Aircraft Corporation, Limited, Rear-Admiral Sir Matthew Slattery and Mr. Peter Masefield have resigned from the board and relinquished their respective offices of chairman and managing director. (See page 15.)

ELECTRONICS IN TRANSPORT

Limitations and Potentialities

*By G. H. HINDS, O.B.E., Electronics Advisory Officer, British Transport Commission**

THE objects of a transport organisation are three—to provide a service, to provide that service with safety, and to provide it economically. How can electronics help by improving under any one of these three heads without doing damage to either of the others?

What do we mean by electronics? It is one of those catch phrases, like automation, which can mean practically anything that the user of the term wants it to mean; it is not defined and it is not precise. Historically one can go back about half a century to the invention of what very quickly became the wireless valve, and for a long time electronics was synonymous with what was called "glass bottle electricity"; that covered not only valves as used in radio and radar and a lot of other applications, but also cathode ray tubes, which became your wireless television receivers, and other forms of electronic equipment depending on some sort of vacuated glass bottle. But in recent years the situation has changed and we now have small crystals of semi-conductors which can perform better and more economically many of the things which used to be done by glass bottles; another extension of the idea uses magnetic ceramic materials known as ferrites.

As long as we were dealing with thermionic valves and the semi-conductor devices, transistors, and what not, most of the applications were concerned with making measurements, communicating information, manipulating information, and presenting the results, and all those handled minute electric currents; but another recent line of development springs from the fact that it has been discovered that exactly the same principles and many of the same materials can be used for handling larger electric currents so that now electronic devices can be and are being used for controlling electric power of increasing magnitudes. At least one multiple-unit train is running in which the rectification of the traction current is dealt with by a crystal of silicon. This is certainly an electronic device in no way different in principal from the small valve in a radio set, so that the scope of electronics is exceedingly wide.

Characteristics

The first characteristic of electronic devices is the exceedingly high speed at which they operate. A little while back when computers first came in, they were handling information at the rate of 10,000 items a second; the latest one which is being developed in America is intended to handle items of information at 10,000 million items a second, which is, of course, a speed which one cannot really imagine. Another feature of most of these devices is the very great accuracy with which they carry out the tasks for which they are used.

Because in general they have no moving parts, they are essentially more reliable than mechanical and electro-mechanical devices being used at present; this statement needs qualifying because in order to get information into an electronic machine or to make one machine do work there has generally got to be mechanical movement either at the input or the output, and these intermediate translating stages are far less reliable than the electronic core of the system. This increased inherent reliability has one very attractive feature in that it generally reduces the cost of maintenance, but again with this difference—that the maintenance which you have to provide must be specially skilled. Another characteristic of many electronic devices is their high initial capital cost, but to offset that is their potentially low running cost.

How to Use Electronic Devices

There are two diametrically opposite methods of approach when one wants to inquire whether or not it would be profitable to use these modern techniques. The first is typified by the question: "Here is a clever gadget—what can I use it for?" If this method of approach is adopted it usually ends in disaster; it is more or less like "keeping up with the Joneses" and, as we all know, that leads towards the bankruptcy court.

The other method of approach is this: we all know the weak points in our own part of the organisation; we know what parts are not operating as efficiently as they ought. We should ask ourselves these questions: Is it possible to devise a better system for doing what we are supposed to be doing now? and, if so, should that system incorporate modern electronic devices? Now, in order to devise the better system we have got a number of organisations to assist us—we have the operational research people; the O. and M. people in the office; and work study people. Their task is to help to improve the system, and all of them may at some time or another require the use of electronic devices as tools in an improved system. This requires that we ought all to have a general idea of what these modern techniques are capable of doing, and also of their limitations. Specialists in devising systems—in many cases these are ourselves because we know more about what is required than do outside specialists—should have a more detailed idea of what they can and cannot do.

What Can They Do?

What will make these tools really useful in our improved system? Because of the very high speed at which they operate, it is now possible to do a great many things which previously would never have been attempted because they would have taken far too long. Again, these machines can do things more accurately than they were done in the past. Because of their use in various forms of communications they can extend the distance over which it is possible to exert supervision and control. Further, many of these devices can do things more cheaply than they are being done at present by conventional methods.

There are three general classes of application where electronics are being used and where their use can be very widely extended. The first of these is to communications; the second is in engineering and scientific applications; the third is through the various uses of electronic computers. As regards communications, the B.R. modernisation plan, through the use of electronics, mainly following, but in a few instances leading, the practice in the British Post Office Telephone and Telegraph Service, will in time produce an exceedingly efficient telecommunications system with quick access from one point to another and, more important, with adequate capacity for transmitting the very large amount of computer data which could be used for improving the efficiency of the railway network. In addition British Road Services already has the largest teleprinter organisation in the country not under Post Office control. Both networks are likely to be used for direct transmission of information into or out of a computer or a computer-like device and all the existing systems.

Television

There is another communication aspect to which I hope more consideration will be given; that is the increased use of closed circuit television. There are two or three installations already operating—the centralised supervision of the sidings in the Thornton marshalling yard, where the man in the control tower can see all that is going on throughout the yard, and which enables him to make his decisions quickly and accurately and the other way round, in Kings Cross Station, where the times of arrival of up trains as received in the signal box are sent on television sets to various places around the station where that time is required—in the announcer's office, in the public inquiry office, in the office by the train arrival board, and for the station foreman. In this latter application television is being used as a means of broadcasting information which gives a non-transient record; by telephone the record is lost at once; by teleprinter it lasts too long; but by television it will last just as long as it is required.

The second class of application is to engineering and scientific uses; this can be sub-divided into three different sub-classes of which the first, electronic instrumentation, is largely but not entirely of use to the research departments, for example, strain gauges for measuring rail end stresses or stresses in bridges, or the track recording coach which gives a complete record of the condition of the track.

In Service Equipment

The second sub-class consists of electronic equipment being built into service equipments. The automatic equipment in the marshalling yards which controls the release of the retarders starts with radar and incorporates a small electronic computer inside. Another highly debatable one is the hot box detector. We have a development contract with one of the electrical firms for the wagon recording device; this will make it possible to read the numbers of wagons as they pass; in fact, doing by electronics what used to be done by the numbertakers. The difficulty, as in nearly all these cases, is not to design the ironmongery but is to find out how best to use the machine when it is built, and then to decide the amount of equipment required, what it will cost, and what profit it will bring in. On this second and much more difficult stage a working party has been set up to find how to use this equipment when it is engineered and proved in practice; both these stages are expected to take at least another couple of years.

On another side an all-electronic interlocking frame which will have no relays and no mechanical interlocking is being designed for Henley; it will have the merits of increased reliability and much smaller size so that in future signalboxes the size and cost of the building itself need not be governed by the size of the relays but by the size or space required for the man and his control gear. One application being used in France, but not in this country, is the automatic control of the speed of the humping engine in a yard; uniformity has an influence on the efficiency with which the cuts of wagons get to the right place at the right speed in the sorting sidings. The third sub-class of engineering applications which we have looked at concerns the control of machine tools in workshops.

Computers

The final class of applications concerns these connected with computers; these have formed by far the largest proportion of my activities during the three years that I have been with the Commission. British Railways has one computer solely for scientific and engineering work—that at the research department at Derby—and I believe that it is still the only computer in the world which is operated by a railway system for this class of work. It is now the centre to which all the engineering departments ought to make their first approach if they want a computer job done. They have done two or three design jobs on that machine; they have done some bridge stress analysis and they have designed a wagon underframe. In addition, it is being used fairly regularly by one of the regions for calculating point-to-point timings which are now, or ought to be, required in very large numbers by the operating departments for planning the new railway services with the new types of traction.

It is doing a lot of work on the analysis of trials, thereby taking the place of girls doing sums in the office and, incidentally, producing the results of trials in a week or so instead of in a year or so; the first big analysis it did was of some measurements made on the retardation of trucks in the Whitemoor Yard—not only the retardation but the variability of that retardation which is an essential factor for the correct design of an automatic yard itself. A very large programme of trials analysis and reduction is planned for that machine in connection with the electrification systems tests which will involve measuring a fantastic range of quantities; it is proposed to make measurements at the rate of about ¾ million an hour.

Finally, we come to the use of computers in the office "wherever it would be profitable to do so"; that is not a platitude—it is the Commission's objective. The three potential sources of profits from using a computer in the office are first of all the straightforward one of saving clerical work. The second is to produce information more quickly so that it is news and not history, more accurately and in a better digested form so that it can be used more easily; it is assumed that you will do your jobs better when you know quickly what is happening, and it is from that direction that the profit is expected. The third direction is possibly a slightly more subtle one, but I believe the most profitable of all: that is as a tool of the operational research worker.

*Abstract of a paper read to the Metropolitan section, Institute of Transport.

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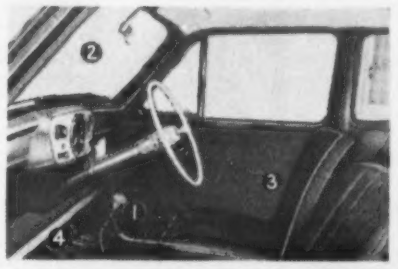

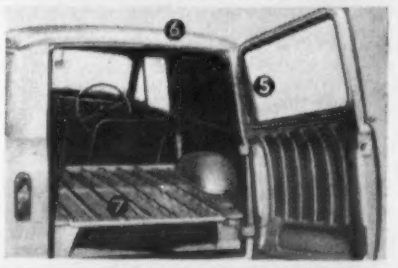

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LORRY—BUS—COACH

Rural Bus Committee Visits

THE Committee on Rural Bus Services, which was set up last September by the Minister of Transport, is to get first-hand information on the rural bus situation. Members of the committee, comprised of sub-committees of three, are to visit various parts of England, Wales and Scotland in April, May and June to talk to country people directly affected about their bus problems. The committee will not be making recommendations about particular bus services or about particular places and the visits are to glean impressions and examples of the problems. Anywhere not visited by the committee should not therefore think that its difficulties are being overlooked, says the Ministry of Transport. Five areas have been chosen to give a cross-section of rural areas of different types. These areas are in the North East, the Fens and the South West of England, mid-Wales, and Scotland. To make full use of local knowledge, some of the county councils in each area are being asked to help the committee in planning the itinerary and in making necessary arrangements. It is hoped that sub-committees may be able to visit Sweden and Switzerland to see the postal bus system in widespread operation there.

Fish Market Handling

PROPOSALS to mechanise handling methods at Aberdeen fish market for a three-month trial period have been put forward by a local haulier. He is Mr. George T. Fraser, who operates a fleet of 38 lorries mostly for the fish trade. He made his offer to the council after staging a demonstration of mechanised handling at the fish market in November. Mr. Fraser has also asked the council to replace wooden doors with overhead roller doors at loading berths in South Market Street. This, he claims, would allow more lorries into the market, thus relieving congestion and clear fish more quickly.

Get-Together on Staggered Hours

NEW moves to bring about more staggering of working hours in Central London have been made by the London Travel Committee. It is approaching groups of firms in the West End and City with similar business interests—such as insurance, shipping and tobacco—and asking them to bring in staggered hours. The new drive is meeting with some success. For example, following a meeting with big City insurance offices, a leading company has altered its hours so that its 750 staff now leave at 4.45 p.m. to avoid the heavy 5 p.m. homeward rush from the city.

Fatal Socialist Prejudice

BY daring to suggest that the idea of sweeping nationalisation should be abandoned, Mr. Gaitskell had provoked a good deal of opposition from the extremists in the party and it was evident that he is now prepared to sacrifice road haulage—and iron and steel—as a sop to the wild men of his party. So saying at Southport at the week-end, Mr. R. N. Ingram, R.H.A. chairman, went on: "Now that an agreement has been patched up, every Socialist who ventures to speak on the subject of transport will be forced, whatever his own feelings or whatever line of argument he is following, to contrive in the end to agree with the strong party view on road haulage. This sort of prejudice is fatal to any impartial survey of transport. It is all the more disappointing because there are some people on the Socialist benches with a wide knowledge of transport who might be expected to make useful contributions to Parliamentary debates if only they could be released from the stranglehold of party dogma.

"As it is they have no genuine or up-to-date arguments to put forward. For what could they say? The road haulier is providing a wonderfully useful service with never a complaint from his customers. He could measure up to any standard of efficiency, and there is no justification for the kind of disturbance threatened by the Socialists. For the most part, therefore, Socialists have to rely on arguments as antiquated as Clause 4 and they cannot be expected to be taken seriously except by people who, like themselves, have been indoctrinated."

Road tankers in the fleet of the 100-years-old Carless, Capel and Leonard, Limited, include an A.E.C. Mercury and Atkinson eight-wheeler seen at St. Clement's Wharf, Bow; right, a Leyland Beaver of a Prescot (Lancs) haulier entering London after a night journey

Northern Licence for Yorkshire Base?

THE Yorkshire Area Licensing Authority, Major F. S. Eastwood, expressed surprise at Bridlington on March 23 that the Northern authority, Mr. J. A. T. Hanlon, should have issued a licence for vehicles based in the Yorkshire area. During the hearing reference was made to a new B-licence application by Mrs. A. Oxley, trading as Caravans (Hull), for a vehicle of 1½ tons (a Land-Rover) to tow caravans within 100 miles of Hull Post Office, a recent grant to Messrs. B. P. Quinn and J. E. Hall, after an inquiry at Darlington. Representing objectors, Mr. R. E. Paterson led evidence from Mr. A. Ashton, of Seaton, near Hull, that he had recently put a man on his own Land-Rover in view of the incursion into the neighbourhood by a licensee from the Northern area, who was "basing the vehicle on his doorstep with the blessing of the Northern Area Licensing Authority." Major Eastwood: "Did you say the Northern Area Licensing Authority has granted a licence in my area?" Mr. Paterson replied that it was so, and quoted from a submission by the B.T.C. solicitor at Darlington, "that the application had been conceived in Yorkshire, but, like the Victorian lady in similar circumstances, it had given birth in Darlington in the Northern traffic area, so that the neighbours who might otherwise have commented on it, were not in a position to do so." The application was refused and Major Eastwood said he would immediately communicate with Mr. Hanlon on the issue raised.

Municipal Wage Settlement

TERMS of the settlement reached by the N.J.I.C. for the municipal bus industry last week have been made known. In addition to a wage award of from 5 to 6½ per cent the working week is to be reduced from 44 to 42 hours without loss of pay. Staff with over 10 years' continuous service will receive an extra three days' holiday. The present basic rate for a bus driver will rise from £9 2s. to £9 12s. 6d. and for a conductor from £8 17s. to £9 7s. 3d. The awards will take effect immediately. A new national agreement on standing passengers, having special reference to large double-deckers, has been negotiated. Buses with 70-78 seats will be permitted five standing passengers during peak hours only (instead of eight at any time), but those double-deckers with fewer than 70 seats may continue to take up to eight standing. The maximum capacity of one-man single-deckers has been fixed at 45 seats.

Putney Experiment Being Watched

IN the annual report of the London and Home Counties division of the Traders' Road Transport Association it is disclosed that during the year new and extensive loading bans in the London area were avoided, although several proposals had to be strenuously resisted. The London "pink zone" resulted in very few new regulations and few bans on loading and unloading. The success of the scheme was almost wholly the result of enforcing existing regulations. The result was a definite improvement in traffic flow, says the report.

The determined opposition of the T.R.T.A. to omnibus proposals some time ago to institute loading bans at 23 main shopping centres in London and suburbs is recalled in the report, and a warning is sounded that while the scheme was defeated three years ago these and other proposals are being "raised again individually." Two sites were Finchley Road and Putney High Street and member-firms, the report said, were being asked to let the T.R.T.A. know of the effects of bans on deliveries and collections.

Housing Estate Bus Loss

FOR the past seven years two bus services on the south side of Glasgow have been running at an annual loss of £35,000. In an effort to cut this loss the bus terminals have been altered. They serve the postwar Pollok housing estate.

One-Man Portsmouth Buses

AFTER lying idle at Eastney depot since October last while wage negotiations for provincial busmen were proceeding, the 10 new Portsmouth Corporation one-man operated standee buses will go into service on April 3. The buses seat 34 passengers, with an additional authorised standing complement of 26. The drivers will receive 15 per cent above basic rates.

Meat Prosecution in Dundee

FOR contravention of local regulations covering the transport of meat a £7 fine was imposed on Robert Ower, Limited, a local carrier, at Dundee Police Court. It admitted carrying or conveying a carcase intended for human consumption in a vehicle which was not covered or closed and approved by the Corporation for that purpose. Mr. John E. C. Burns, burgh prosecutor, said there had recently been a certain amount of publicity given to the matter of covered vehicles for the carriage of meat. A sanitary department inspector said that he saw an open platform type motor vehicle standing in the roadway. Stacked against the tailboard were four sides of beef which were partly wrapped in jute sacking. The driver said he had uplifted the meat from premises of meat salesmen at the slaughterhouse for delivery to a shop. It was an extremely unhygienic method of carrying carcases.

Bus and Coach Developments

Airflow Coaches, Limited, West Bromwich, seeks the licences of Mrs. E. Lloyd.

Kent's Coaches, Limited, Baughurst, applies for the licences of A. Ford and Son, Silchester.

Basil Gregory, Newport, Launceston, seeks the licences of W. E. Prout.

At Southport, Poole Brothers, Blundells Coaches (Southport), Limited, and Enterprise Tours (Southport), Limited, propose linking excursions and tours to common destinations.

Maidstone and District Motor Services, Limited, desires to withdraw the Maidstone—Gillingham section of its services 7 and 33 from Tunbridge Wells.

West Hartlepool Corporation seeks for a six-month experimental period to suspend its Church Square—Elwick Road and Church Street—Ward Jackson Street services in favour of a circular service from Church Street via Victoria Road, Elwick Road and Linden Grove.

Starting on Sunday, April 10, the London Transport 5s. Green Rover bus ticket is being extended to cover 17 Country bus route serving the Grays, Tilbury and Romford areas, including route 339 between Epping and Warley. This will enable Essex people to make extensive day tours of Kent beauty spots by taking a 7d. ferry trip across the Thames from Tilbury to Gravesend.

Southdown Motor Services, Limited, proposes to withdraw its Service 158 (Chichester—Westerton—East Dean) covering the southern half of the route by diverting 64 between Westhampnett and Boxgrove Corner. The Bilsham Corner—Sparks Corner section of 64 would be abandoned in favour of diverting journeys on 31 (Brighton—Portsmouth) and 64 would become Chichester—Yapton (Sparks Corner).

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RAILWAY WAGONS

Use and Misuse

By F. C. MARGETTS, Assistant General Manager (Traffic), North Eastern Region*

CLAUSE 29 of the reappraisal of the plan for the modernisation and re-equipment of railways envisaged a reduction in the wagon fleet, which was just over 1 million at the end of 1958. It was estimated that the requirements at the end of 1963 would lie between 700,000 and 800,000 wagons, and 750,000 was taken as the planning figure. It is with this declared policy of the B.T.C. in the background, and with the knowledge of recent wagon supply difficulties in the foreground, that this paper is presented.

In 1939, the railway and privately-owned wagon stock was 1,236,000. The average capacity was 11.69 tons. In the 10 years to 1948, it fell by only 73,500. In January, 1958, the B.T.C. decided to reduce the stock by 100,000 wagons. Later, further withdrawals, totalling nearly 90,000, were planned. By the end of November, 1959, the stock was 934,000. The average capacity was 15.09 tons. It will be seen that there is some way to go yet before the reappraisal figure of 750,000 wagons is reached.

Present System of Control

Throughout the country, there is a wagon control and distribution system. It is on a common basis for all regions. More than once, the question has been raised as to whether it is the most efficient which can be devised. In the last 10 years, three detailed reviews have been made.

It is surprising that these reviews more or less accepted the "status quo." Particularly is this the case when the whereabouts of the majority of our wagons is not known; when there is little record of the use made of them; when the constant and seasonal patterns of movement are not measured; when no one is strictly accountable, financially or otherwise, for their demands upon, and use of, the common stock.

Maybe it is because wagon control has for years been in the hands of a rather exclusive group of "experts" who, through operating in the field of plenty for so long, and in accordance with instructions which have remained comparatively unchanged for 19 years, have come to regard themselves, and be regarded by many, as infallible in their own field. Over the years, a type of "wagon mind" may have developed which abhors change, can see nothing wrong with the old regime, has little or no knowledge of costs and is completely out of touch with present-day commercial conditions.

Availability of Wagons

Recently we have had an artificial shortage with a stock of wagons greater than is finally envisaged. One should wonder whether we can afford to decide how to use our available wagons on the basis of a small amount of knowledge. It will be noticed that the term "control and distribution" has not been used in expressing this thought. This is deliberate because I feel that we must bring into the forefront the necessity for planning the "user" to a greater extent than is now done. Additionally, one cannot control something the whereabouts of which is not known. Expressions like "there is a wagon shortage," "it was short-sighted policy to scrap wagons," "there are not enough wagons to meet demands" are bandied about.

What we really mean is that our figures indicate we have less wagons than are said to be required for any and all purposes, and consequently we have been unable to place empty wagons at the place at which they are required at the right time. The figures are rarely challenged. They are accepted as the true measure. And the requirements are accepted as well. A little simple arithmetic then proves a "wagon shortage."

I'm All Right, Jack

Increase in traffic, interference with movement, increased repairs—these and other factors result in fewer and fewer wagons being shown in Section B of the regional stock reports. This is the section which portrays the district position to the regional headquarters and the regional position to the B.T.C. Contraction in the "spare" figures and expansion in the "wanted" figures also means that the districts and regions have helped themselves to all they want irrespective of the value of the traffic for which they have earmarked wagons, irrespective of cost of working and with a complete disregard of the wants of others. Consequently, administrative headquarters is faced itself with the onus of calculating, or guessing, where the impact of shortage should fall and may well have to make decisions on a position which, to say the least, could be quite false.

A study of the L and E columns of section B of the daily freight stock returns issued in respect of all regions will show that:

(i) as the demand for wagons becomes more intense, the figures in column E of the stock report shrink, because any empty wagons on hand are required for loading and so do not appear in the return at all; and

(ii) as the use of wagons becomes more intense they are less often in places where they can be recorded in stock reports at all.

When these figures are presented as a percentage of the wagon stock, one gets some idea of the low proportion of stock on which regional and B.T.C. headquarters are asked to adjudicate.

There is no way of quantifying the two factors mentioned. But we may be entitled to state an axiom that "The more intensive the use of wagons, the lower the percentage of available stock which can be expected to appear in the stock reports"; and we might add an expression of view that "As a consequence, the effective user of available stock throughout the country in relation to conflicting demands becomes less and less a matter of balanced judgment and more and more a matter of guesswork."

Location of Wagons

Recently, on three successive days, a special count of wagons was made in the North Eastern Region. The results, when compared with Section A of the stock report, were extraordinary. The stock report figures recorded as a percentage of the census figures were: Open, 57 per cent; covered, 61 per cent, and steel-carrying, 5 per cent. Comparisons produced even further shocks. It was found that the number of wagons shown in the stock reports was actually fewer than the number revealed in the census as being at terminals, i.e. at all types of location except "on trains and in yards." The number of wagons upon which wagon distribution is based, i.e. column E plus column U of section B of the freight rolling stock return, was recorded as a percentage of the total revealed by the census. It was found that only 17 per cent of the open wagons, 26 per cent of the covered wagons, and 13 per cent of the steel-carrying wagons revealed by the census were recorded in these two columns.

This led to an analysis of the empty wagons moved according to the forwarded empty columns of the weekly summaries. The wagons shown in this column can be regarded as those brought into play empty to meet requirements elsewhere as a gross response to control at all levels. The figure was found to be 7 per cent of the total revealed by the census. The committee studying the results then hit upon the idea of recording the directional flow of loaded wagons.

Flows

Thence came the thought that throughout Great Britain there are such regular flows which might be described as permanent currents, overlaid at times by spasmodic currents carrying traffics in other directions. Any permanency of movement ought to be capable of measurement and of weaving into the forward-thinking we should have on wagon distribution. One is prompted to dwell on the fact that someone, somewhere, knows the destination of every wagon which is loaded on any day simply because a wagon label giving the destination has been attached to the wagon.

Why should the information not be coded and sent to a central point where it could be analysed into flows, either regionally or by specific routes, or, in some cases, for particular destinations. Before dawn next day, it should be possible, by the use of adequate communications and some type of calculator or computer, to paint a picture of movement which may well form a basis on which more accurate forward-planning could be based.

Time of Recording

It has been argued that 4 p.m. would be a more reasonable time at which to assess the wagon position than 10 a.m. The main advantages of such an arrangement would be:

(*a*) It would be more factual than the present 10 a.m. stock report.

(*b*) Being more factual, it must be more reliable since less assumption would be invoked.

(*c*) Being more reliable, it should logically follow that the distribution arising from a more accurate report would be more efficient.

(*d*) That the wagon picture would have been taken after a period of maximum activity and not after a long period of inertia.

(*e*) That the U column, which must always be based on assumption, would largely disappear with the 4 p.m. statement. Such figures as did remain in this column would be more accurate.

(*f*) The required figure would be much more accurate.

(*g*) At 4 p.m. it would be possible more accurately to distinguish between the paper figure for surplus wagons and the numbers actually moving or about to be moved that afternoon or evening.

There are many opponents to the suggestion that the stock report be taken at 4 p.m. Indeed, there are very few who support it. In fact, it might be said to be a monopoly idea of the North Eastern. Wagon control and distribution should be managed so as to give maximum user from the wagon stock, and the organisation should be tuned to that end. A declining wagon stock and an increasing price per unit should compel us to think again and again about our organisation.

(To be continued)

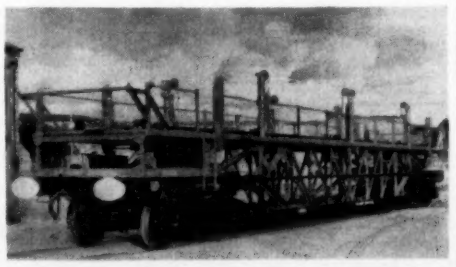
* Abstract of a paper presented to the Railway Students Association in London and read in Mr. Margetts' absence through illness by Mr. L. F. Hick.

CAR TRANSPORT BY RAIL

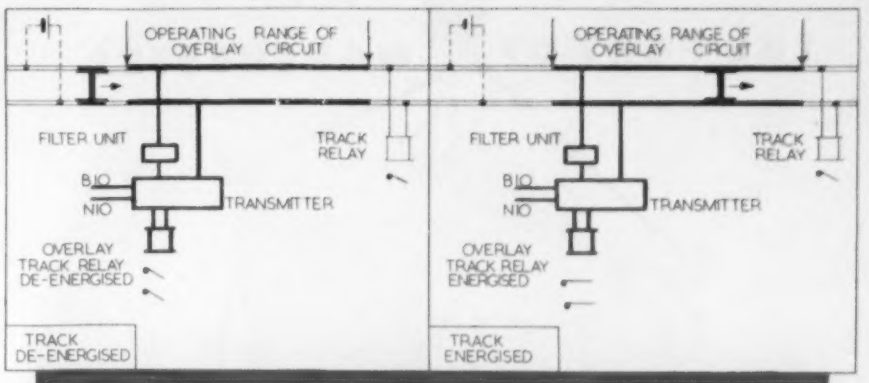
Two-Tier Wagons for W.R.

RECENTLY six two-tier motorcar transporters were supplied to the Western Region of British Railways by Newton Chambers and Co., Limited, Thorncliffe, Sheffield. This transporter, designed and made in the engineering division at Thorncliffe, was the first of its kind to be made in this country and has been tested and proved in regular use on the Continent as well as on British Railways. The first of the type was made and supplied to M.A.T. Transport, Limited, which took 12 of them after a test of the prototype; they are in use for the transport of cars to and from Germany via Harwich.

The vehicles supplied to British Railways have had slight amendments made to suit B.R. requirements. It is understood that they will be used for the transport of cars from factories to points of shipment. On these two-tier transporters five cars may be accommodated on the upper deck and two on the lower deck. The truck can carry a total load of 10 tons. The main feature of the vehicle is in the two hand-operated platform hoists which form the centre portion of the truck. When raised the top and bottom decks of the hoists come up together, so providing a perfectly flush top deck. All loading is carried out from the top deck where the operators are not hampered by lack of space.



Newton Chambers car transporter



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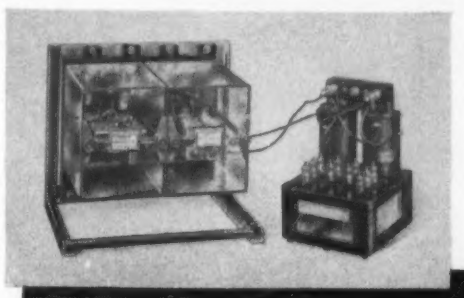

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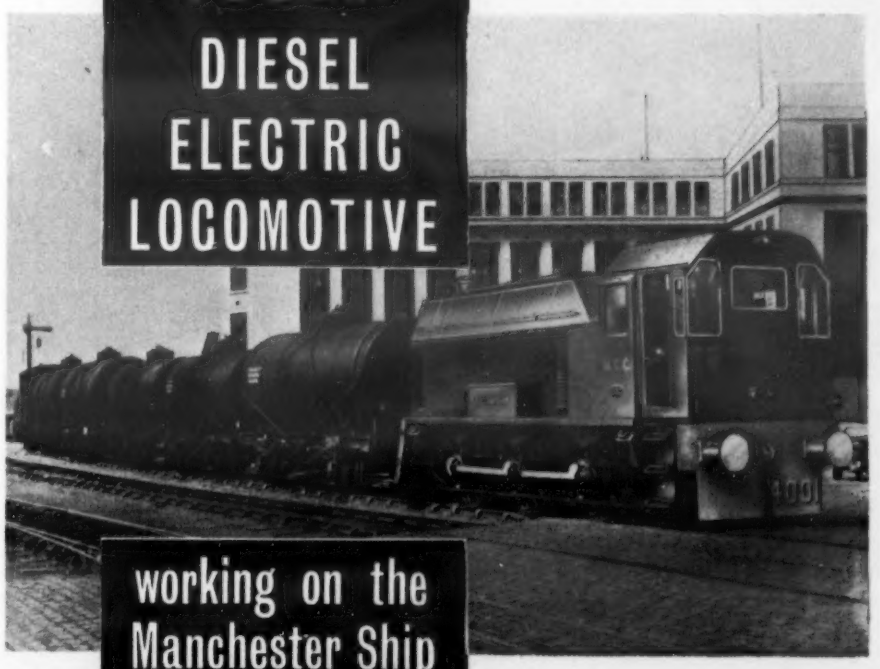

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Activity at British Airports

FIGURES FOR 1959

AIR transport movements at United Kingdom aerodromes in December, 1959, numbered 21,985, an increase of 24 per cent on December, 1958. This brought the total for the year up to 358,388, an increase of 6 per cent over 1958. Passengers for December were 472,481, an increase of 32 per cent over last year, and brought the total for the year to 8,309,420, an increase of 17 per cent over 1958. Freight traffic in 1958 amounted to 248,898·9 short tons, an increase of 35 per cent over 1958, and mail picked up and set down during 1959 totalled 19,873·2 short tons. Airports in the London area as a whole showed an increase in 1959 of 3 per cent in air transport movements and an increase of 18 per cent in the number of passengers handled compared with 1958. At London Airport there were 118,809 air transport movements, an increase of 1 per cent over last year and 4,097,058 passengers were handled, an increase of 15 per cent. At Gatwick Airport there were 15,617 air transport movements and the number of passengers handled was 369,697. These figures cannot be compared with those for the previous year as Gatwick was not reopened to traffic until May 30, 1958, but taking comparable periods, during the months June to December air transport movements increased by 21 per cent to 11,785 and passengers by 59 per cent.

Bournemouth (Hurn) showed the greatest increase in passenger traffic during 1959 with an increase of 66 per cent to 53,364. Other large increases in passenger traffic were at Leeds-Bradford (Yeadon) 60 per cent to 44,360, Newcastle (Woolsington) 55 per cent to 66,511, Edinburgh (Turnhouse) by 33 per cent to 156,721, Blackpool (Squires Gate) by 33 per cent to 72,825, Portsmouth by 26 per cent to 6,969, Lympne by 24 per cent to 65,655, Benbecula by 22 per cent to 16,165, Belfast (Nutts Corner) by 20 per cent to 323,755 and Aberdeen (Dyce) by 20 per cent to 47,893. Further figures are given in the accompanying table.

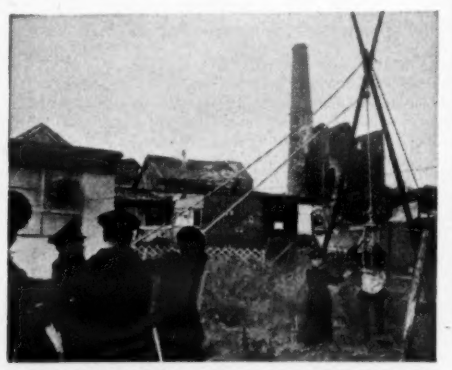
BRITISH AIRPORT TRAFFIC IN 1959

	Aircraft movements		Passengers handled†			Freight‡ set down and picked up	Mail set down and picked up
M.O.A. and other U.K. aerodromes	Total	Air Transport	Total	Terminal	Transit	Short tons	
Year 1959 ..	727,181	358,388	8,309,420	7,866,588	442,832	248,898·9	19,873·2
1958 ..	719,122	339,853	7,106,411	6,761,171	345,240	184,609·6	18,755·0
London area aerodromes							
Year 1959 ..	210,986	142,969	4,692,840	4,600,823	92,017	78,893·1	13,291·5
1958 ..	258,318	139,136	3,993,438	3,953,161	40,277	63,318·5	12,340·3
*London	129,641	118,809	4,097,058	4,012,187	84,871	69,761·6	12,912·7
*Blackbushe	22,170	5,085	192,823	187,949	4,874	569·4	6·2
*Croydon	12,264	2,942	15,519	15,499	20	8·8	—
*Gatwick	22,165	15,617	369,697	367,850	1,847	8,313·7	372·6
*Stansted	23,968	346	17,353	16,948	405	237·7	—
Westland Heliport, London ..	778	170	390	390	—	1·9	—
Other U.K. Aerodromes							
Aberdeen (Dyce)	13,709	2,951	47,893	39,585	8,308	346·4	51·3
*Belfast (Nutts Corner)	13,881	12,755	323,755	320,840	2,915	4,506·5	1,752·8
Benbecula	1,637	1,337	16,165	9,845	6,320	114·8	38·2
*Birmingham (Elmdon)	31,761	9,129	189,181	176,086	13,095	1,257·4	—
Blackpool (Squires Gate) ..	28,514	3,069	72,825	71,602	1,223	258·1	1·3
*Bournemouth (Hurn)	22,371	4,354	53,364	48,493	4,871	2,840·1	11·4
*Bristol (Lulsgate Bottom) ..	19,904	2,998	38,035	30,430	7,605	694·3	—
*Cardiff (Rhoose)	20,185	3,184	41,220	28,213	13,007	367·9	2·2
*Edinburgh (Turnhouse)	10,332	5,620	156,721	149,263	7,458	192·5	2·1
*Ferryfield	33,650	32,731	261,195	261,195	—	101,319·5	—
*Glasgow (Renfrew)	22,858	20,161	528,682	505,025	21,657	3,123·3	335·1
Inverness (Dalcross)	7,922	2,309	31,845	24,007	7,838	145·1	114·7
Islay (Port Ellen)	922	871	11,765	11,726	39	85·0	44·2
*Isle of Man (Ronaldsway)§ ..	12,697	10,884	218,104	204,125	13,979	1,400·3	168·7
Kirkwall	2,570	2,376	30,982	23,766	7,216	263·6	77·7
Lands End (St. Just)	6,273	5,882	29,029	29,029	—	81·5	5·8
*Leeds-Bradford (Yeadon) ..	24,151	2,489	44,360	44,115	245	356·7	0·2
*Liverpool (Speke)	12,999	6,883	135,714	131,245	4,469	682·5	814·6
Luton	29,575	510	3,272	3,113	159	1,227·9	—
*Lympne	16,640	2,613	65,655	65,655	—	—	—
Machrihanish	1,593	1,528	16,196	7,688	8,508	32·1	2·7
*Manchester (Ringway)	32,735	25,908	565,840	489,078	76,762	9,492·9	2,785·5
*Newcastle (Woolsington) ..	10,588	2,595	66,511	65,975	536	351·3	—
Portsmouth	11,331	1,350	6,969	6,969	—	—	—
*Prestwick	28,090	9,058	243,658	120,907	122,751	1,610·7	159·5
Scilly Isles (St. Mary's)	6,077	5,885	29,136	29,136	—	81·2	6·0
*Southampton (Eastleigh) ..	24,162	7,158	99,340	96,412	2,928	8,822·5	—
*Southend (Rochford)	62,553	23,222	216,658	216,658	—	29,947·0	—
Stornoway	1,455	1,206	19,257	17,456	1,801	193·6	47·2
Sumburgh	1,004	813	14,412	14,412	—	157·0	76·2
Tiree	913	869	4,521	3,025	1,496	8·8	3·2
Wick	3,149	2,721	34,320	20,691	13,629	45·3	81·1
Channel Islands Aerodromes							
Year 1959 ..	..	..	47,494	786,875	741 413	45,462	4,115·7	..
1958 ..	..	..	48,745	699,708	663,278	36,430	3,540·5	..
Alderney	..	..	2,566	17,528	16,520	1,008	102·3	..
Guernsey	..	..	13,804	187,862	169,959	17,903	1,260·3	..
Jersey	..	..	31,124	581,485	554,934	26,551	2,753·1	..

NOTES.—†Revenue and non-revenue passengers on air transport movements only. Each passenger in transit through a reporting aerodrome is counted once only.
‡Commercial freight set down and picked up on air transport movements only.
§Isle of Man (Ronaldsway) figures include diversions to Jurby.
*U.K. Customs airports.

Gipsy fire fighter. With 4 man crew the Cornwall Fire Brigade Gipsys weigh 2 ton 6 cwt. Standard equipment includes a front-mounted 500 g.p.m. Coventry Climax pump. The extended roof trough takes two 10ft. lengths of suction hose. Side apertures are fitted with roller shutter blinds.

Escape training—42 feet up. Waiting below, a Gipsy and Austin 5 ton pump escape which carries the 50 ft. wheeled escape ladder. The Brigade's 5 tonners, fully manned and equipped, carry a total weight of 7 ton 15 cwt. Chassis are of 1940, 1949 and 1950 vintage.



Danger—Mineshaft. 2,000 unprotected mineshafts pockmark the Redruth-Camborne area, many over 200 ft. deep with mouths concealed by vegetation. Firemen descend by breeches buoy to haul up trapped animals. Between them they have collected 136 awards.

A typical Cornish street—and no joke when you're going top speed to a fire. Country lanes are equally hazardous. "Here," says Chief Fire Officer Christmas, "my Gipsys really score—and they can cross rough open country to get right up to a fire."

FIRE! and the Cornwall Austins go in fighting

ALARM—FIRE! A gleaming Austin Gipsy hurtles from a Cornish Fire Station. Behind it, bells clanging, roars a second engine—a pump escape for town fires or blazing chimneys. A water tender for country calls to isolated farmhouses, heath or forest fires. Both on Austin 5 ton chassis.

The 30 fire stations in Cornwall get an average of 1,500 calls a year. Some 500 are special service calls, including rescue calls etc. that take emergency and rescue tenders to cliff faces, tide-trapped holidaymakers, grim gaping mineshafts, road, rail or air crashes. These vehicles, mounted on 1940 2 ton Austin chassis, carry full equipment for any emergency.

Also mounted on these 2 ton chassis are canteen and mobile service vans, stores vans and towing vehicles. All 2 and 5 tonners are powered by a special 106 b.h.p. high speed engine developed for the Cornwall Fire Brigade by Austin in 1949.

The men—and the machines Lives may depend on a fireman's skill. And he depends on his vehicles. Mr. B. A. Christmas, M.B.E., Chief Fire Officer for Cornwall, says, "Our vehicles must go where we want them to go, go darned fast and never let us down." His 74 vehicles, including ¼ and ½ ton personnel vans, are all Austins. "Standardisation," says Mr. Christmas, "is more economical and more efficient, particularly when you carry a large supply of spares. I have standardised on Austin and am completely satisfied."

Newcomers—and a major success—are the 7 Gipsy Fire Engines. 4 more are on order and the Gipsy has been adapted as a control unit for major incidents.

Cornish roads are hazardous—narrow, twisting, steep. Cornish towns are nerve-racking to speed through. "Here," says Mr. Christmas, "my Gipsys really score. They maintain high speeds safely and in four-wheel drive they get right up to fires across open country."

The Austin commercial range includes all-purpose vehicles from ¼ ton to 7 tons, plus prime movers for 15 ton gross train weights. L.W.B. or S.W.B. Petrol or diesel engines. All available as chassis/cab/scuttle units for special bodywork. 12 months' warranty and backing of B.M.C. Service.

AUSTIN

THE AUSTIN MOTOR COMPANY LIMITED
LONGBRIDGE · BIRMINGHAM

MODERN AIRWAYS and COMMERCIAL AVIATION SECTION

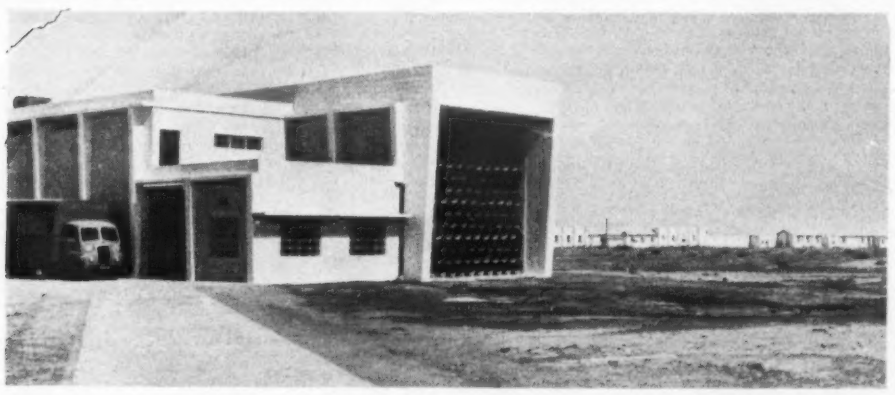
THE PROGRESS OF P.I.A.

*2—Scope of Developing Operations**

THE chocks-to-chocks allowance for the Karachi—Tehran sector is 5 hr. 15 min. for the piston-engined Super-Constellation aircraft as against 2 hr. 55 min. for the Boeing on the westward flight. We knocked 10 min. off that time but, pleasant as it was after the first few minutes' flight through rather dirty weather, it did seem something of a drag after our experience on the outward journey. This is not to suggest that the use for the older aircraft is vanishing. Pakistan International Airlines has plenty of ideas for developing its operations but it is determined also to undertake such expansion with due regard to economic operation. Apart from the advent of the Boeings the airline is also facing the need to prepare for the three Fokker Friendships which it receives in the autumn primarily for use on its services in East Pakistan which are at present maintained with Dakotas. It is possible that further Friendships may be purchased to supplement the Vickers Viscounts which maintain the trunk services in West Pakistan and also those to Delhi and Bombay. The longer hauls from Karachi and Lahore to Dacca, linking the two wings of the country, are maintained by Super-Constellations and these will continue to fulfil that task for quite a while yet. For one thing the runway at Dacca at present lacks adequate bearing strength for the jets. Flights from Karachi to Kandahar and Kabul have been suspended, but the Karachi—Quetta service is likely to be resumed and possibly extended to Multan and Lahore.

The flights, of which there have been as many as 2,000 in a year, involve negotiating narrow mountain passes with peaks such as Nanga Parbat (26,640 ft.) towering above the aircraft. Landing strips are as much as 7,700 ft. above sea level. Loads total about 6,000 tons a year and it is hardly necessary to add that flights can only be made under v.f.r. conditions. That these do not always apply in the north-west may be illustrated by the fact that when we flew from Karachi to Lahore in a Viscount bound for Rawalpindi and Peshawar, the aircraft was prevented by weather from proceeding beyond Rawalpindi and passengers had to be transferred to a Dakota for the remaining sector. Fortunately the loads thereon tend to be a little lighter than on the rest of the route—on the day we travelled all 53 seats were filled from Karachi to Lahore and on the return flight in the evening there was one empty seat and that due to a passenger failing to report. Traffic is very substantial on almost all the services and provision of a four times weekly extra flight between Karachi, Lahore and Rawalpindi and of an additional weekly flight between Lahore and Dacca, making the service six days a week, has been remarkably successful. A feature of the Lahore—Dacca and, for that matter, the Karachi—Dacca services, is the substantial amount of freight carried on these, the main links between the two wings. Substantial quantities of shoes are moved to cite but one example of the somewhat unexpected. There is undoubtedly scope for further development of freight services and the fact that two of the Super-Constellations are of Type H is a pointer to possible future employment.

The captain and first officer of a P.I.A. Vickers Viscount 815 walk out at Karachi to prepare for a flight to Bombay



The new engine test house with P.I.A.'s own de-tuners and, at the left, a Thornycroft of the Pakistan Department of Civil Aviation

A Nonstop Service?

P.I.A. is working hard to bring itself to a standard which equals or, if possible, excels that of larger and older-established airlines. So far as international operations are concerned it can look forward to October when it obtains a complete lease of one Boeing 707-321 aircraft and thereafter operates thrice weekly between London and Karachi. The present service calls at Rome, Beirut and Tehran, while the Super-Constellation calls also at Geneva and Damascus. It is possible that one of the flights with the jet aircraft will be London—Karachi nonstop—a most attractive idea if traffic assessment shows it to have sufficient potential. On the engineering side a great deal of work has been done and a new test unit has been set up for handling the Rolls-Royce Dart and Wright Turbo-Compound engines. It should be added that the test house incorporates a de-tuner evolved by P.I.A. itself with the aid of oil drums. Such ingenuity is an indication of the vigorous spirit which pervades this energetic little airline.

A lorry outside the Lahore office of P.I.A. with part of one of the loads carried by the Lahore—Dacca service

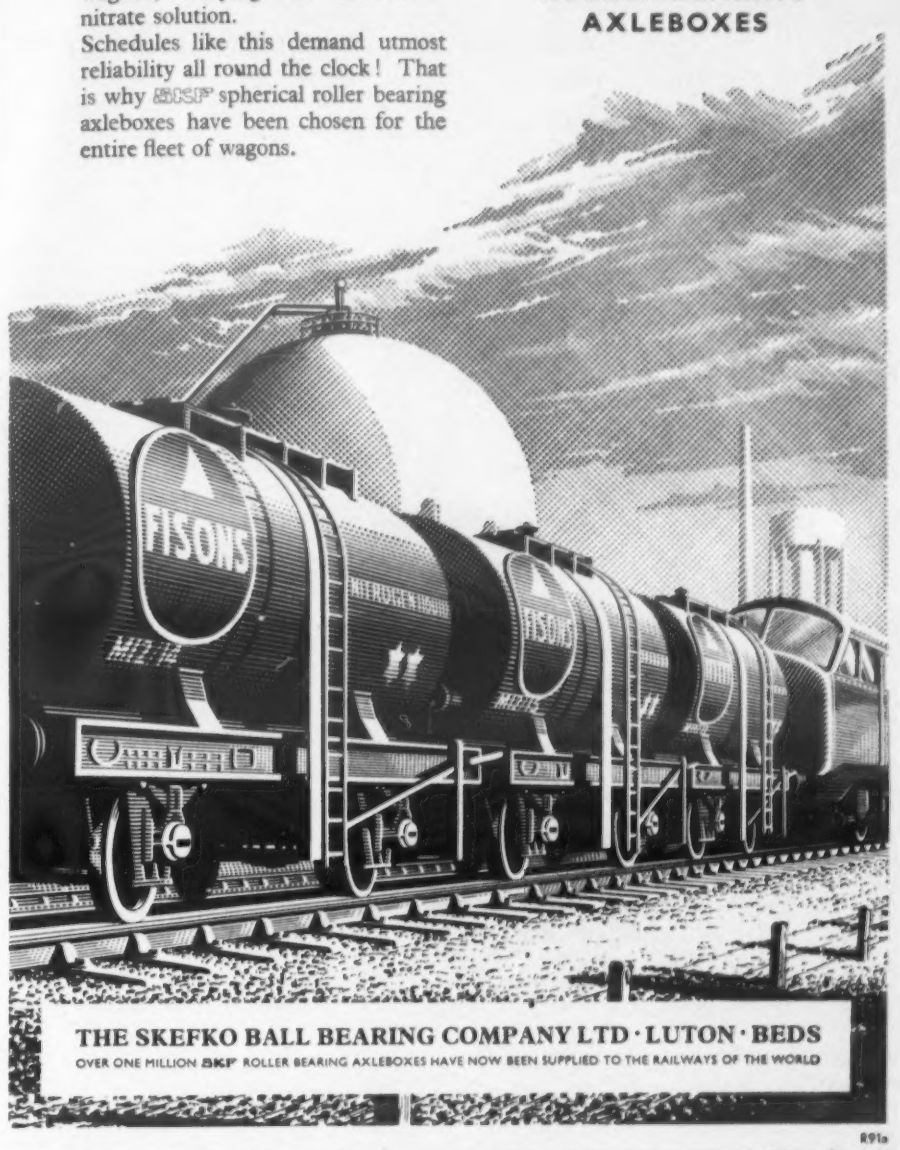
and consequently there is a programme for bringing back into use a number of wartime airfields. One of the first results has been the opening of the service between Dacca and Lalmonirhat, linking the provincial capital with the extreme north of the country. Most of the Dakotas are stationed in East Pakistan but there is still a certain amount of work in the west which only they can perform. This includes the supply runs undertaken on behalf of the Government from Karachi to Jiwani and from Rawalpindi to Gilgit and Skardu. The last two lie in that part of Kashmir which has so far come under Pakistani auspices and most supplies can only reach them by air.

* No. 1 appeared March 19.

This rail tanker fleet works round the clock

Leave Fisons new factory at Stanford-le-Hope every evening. Cover 200 miles in under 8 hours. Discharge and back again for another load at the same high average speed. Day in, day out—that's the life of these wagons, carrying hot ammonium nitrate solution.
Schedules like this demand utmost reliability all round the clock! That is why SKF spherical roller bearing axleboxes have been chosen for the entire fleet of wagons.

SKF
SPHERICAL ROLLER-BEARING AXLEBOXES



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OVER ONE MILLION SKF ROLLER BEARING AXLEBOXES HAVE NOW BEEN SUPPLIED TO THE RAILWAYS OF THE WORLD

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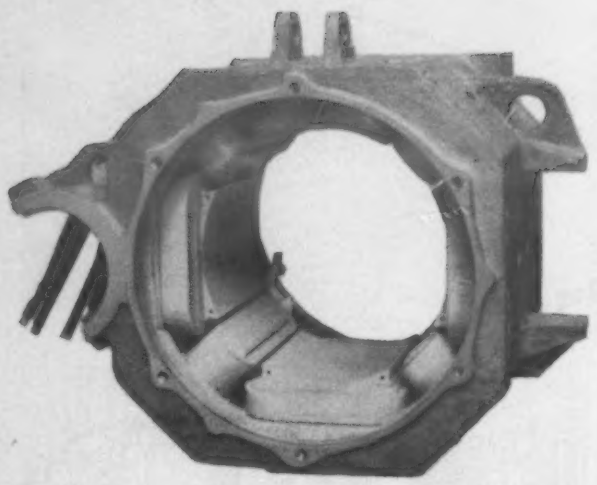
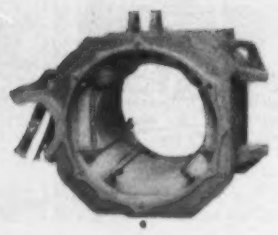
DESIGNING

AND MAKING TRACTION EQUIPMENT



Engineers today have entered upon an era of re-thinking. Something that has always been known, but which has been neglected in the more recent phase of the purely mathematical approach, is now being rediscovered. It is that engineering design is an art as well as a science. This is really no news to the good designer who goes on quietly trusting his eye and his feeling for a sound job. But where does his knowledge—his flair—come from? Quite largely, it seems, from experience. Some of it his own, much of it the common stock of the people he works with. It is the channel through which the total experience of an engineering company such as our own is fed back into new products.
It is not always easy to put one's finger on the details on which it has had an effect. In traction equipment, weight and size must be kept down and it shows up for instance in such things as good space factor obtained by careful pole design. In the design of these motors we were able to make direct use of the experience we had gained with earlier railway motors—as well as more indirectly from hundreds of other equipments built for main line locomotives, shunters, motor coaches and trolley buses.



Crompton Parkinson LIMITED TRACTION EQUIPMENT

Makers of Electric Motors of all kinds, A.C. and D.C. Generators, Cables, Switchgear, B.E.T. Transformers, Instruments, Lamps, Lighting Equipment, Batteries, Stud Welding Equipment, Traction Equipment, Ceiling Fans.

TRACTION DIVISION, CHELMSFORD, ESSEX · TEL: CHELMSFORD 3161 'GRAMS & CABLES: CROMPARK CHELMSFORD

NEWS FROM ALL QUARTERS

Alweg for Vienna Likely

Negotiations on a scheme, which will cost from 130 million to 140 million schilling (£1,625,000 to £1,750,000) for an Alweg railway in Vienna are thought likely this month or early in April. The proposed line would run from the Gumpendorfer Strasse to Meidling Station.

Car Train on the Southern

A special car train, the first on the Southern Region, will run in both directions between Surbiton and Okehampton every Saturday from June 18 to September 10 this year. Motorists will thus be able to travel with their cars loaded in covered vans attached to the same train. This leaves Surbiton at 8 a.m. and returns from Okehampton at 3.55 p.m.

Geothermal Steam Investigation

A £1 million geothermal steam investigation programme, over five years, will start in New Zealand in the coming financial year. The investigations would be mainly at Wairakei. The cost per unit of net output from the Wairakei power station, when it is operating at its proposed maximum capacity of about 250,000 kilowatts, will be below that of many of the hydro-electric stations at present building or under consideration. This programme is in addition to the £3 million hydro-electric power investigation plan authorised last August.

Rubberised Asphalt on Ring Road

Natural rubber is incorporated in both base and wearing courses of Smallbrook Ringway, the first section of the new Birmingham inner ring road, opened on March 11 by the Minister of Transport. This section consists of dual three-lane carriageways, with an additional 8-ft. loading lane on the nearside of each carriageway, running from Suffolk Street to the Bull Ring Market. For part of its length it is carried on viaduct with a car park under. Laid on a concrete foundation, the surfacing of the running lanes consists of a base course, 2¾ in. thick, or normal rubberised Limmer and Trinidad asphalt topped with a 1¼-in. thick wearing course of distinctive red rubberised asphalt dressed with ½-in. red pre-coated chippings. Pulvatex rubber powder was used.

Realism Means 40 m.p.h.

The main facts which emerge from a report to the Minister of Transport by his departmental road safety committee on the experimental 40 m.p.h. speed limit are that on roads which previously had no speed limit, the 40 m.p.h. restriction caused a reduction in speeds and there was a fall in accident rates; while on roads previously subject to the 30 m.p.h. limit, the raising of the limit to 40 m.p.h. caused no appreciable change in speeds or accident rates. In the latter case, the higher limit was more realistic and consequently encouraged a better standard of enforcement. Parliament will shortly be asked for the affirmative resolutions needed to bring into force those parts of the Road Traffic Act, 1956, which will enable the 40 m.p.h. limit to be applied to suitable lengths of road throughout the country.

Ban on U-Turns Ends

The Minister of Transport has decided not to continue with the experiment banning U-turns in certain streets in central London. The experiment was introduced last December. Taxi interests have promised that U-turns by taxis will be made with "the greatest discretion."

Call for Reopening of Birmingham Station

Because of new office building in the vicinity of Five Ways, Edgbaston, the inner western suburb of Birmingham, a proposal has gone to the London Midland Region for the reopening of Five Ways Station on the Bromsgrove line. This would avoid office staffs having to travel into New Street and out again to Five Ways by bus. The railway answer is that at least 300 passengers a day are needed to justify spending £6,000-£8,000 in renovating the station.

Budapest Underground Resumption

It is reported that work is to be restarted on the underground railway scheme in Budapest. Construction was begun in 1950 but halted prematurely in 1955 after some 1,000 million forints had been spent on the scheme. In the past five years the upkeep of the unfinished work has cost some 100 million forints in addition to this total. The reason for the five-year hold-up was the realisation in 1955 that plans to model the system on that of Moscow would be far too expensive. Some four stations of the planned eight are already completed in their essentials.

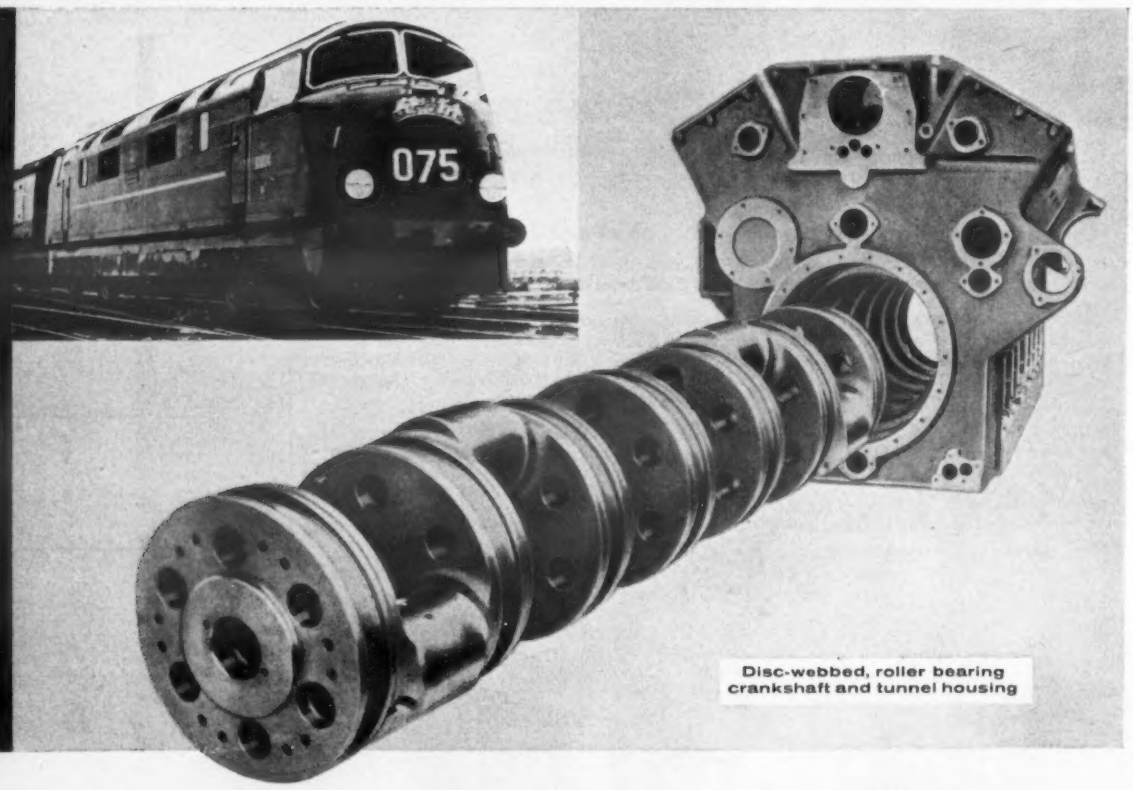
School Promised Trains

Although the London Midland Region is to close the 3¾-mile branch railway from Seaton to Uppingham to passenger traffic, it has agreed to run trains for schoolboys and parents whenever Uppingham School has a holiday or speech day. The East Midlands Transport Users Consultative Committee has announced approval of the scheme to withdraw passenger services on the line and close Uppingham Station, except when needed by the school. Such specials have been run for the school for many years and at present they are worked on seven days annually—at the beginning and end of each term and on speech day.

C.N.R. Reduces its Deficit

Canadian National Railways, in its annual report for 1959, says it was able to combine increased revenues and a tight control of operating expenses to close the year 1959 with a "modest improvement in its net financial result." Railway operating revenues of $740.2 million, improved by $35.3 million over those of 1958, exceeding operating expenses by $19.4 million for a betterment of $14.5 million in net revenue from railway operations. However, a further increase of $6.4 million in fixed charges left the railway with a deficit of $43.6 million—$8 million less than the 1958 deficit. Due mainly to higher wages and extended fringe benefits which cost the company an additional $21.4 million, operating expenses increased by $20.8 to $720.8 million, but 1958 expenses included a non-recurring item of $7.5 million in depreciation. Without this item, a comparison would show 1959 expenses increased by $13.3 million.

Maybach rail traction diesel engines—from 400 to 2,000 hp can achieve 16,000 hours between major overhauls...



Disc-webbed, roller bearing crankshaft and tunnel housing

...ANOTHER ENGINEERING ADVANCE FROM BRISTOL SIDDELEY

Bristol Siddeley Engines Limited produce Maybach* rail traction diesel engines. Covering a power range from 400 to 2,000 hp, these diesels are amazingly reliable and have shown that they can achieve major overhaul lives of 12,000 to 16,000 hours!

The *proven* basic design features of the whole range (straight 4 to 16-cylinder V) are the same, and each unit can be turbo-charged, or turbo-charged and intercooled. The range operates between 1,200 and 1,600 rpm and *combines the best performance and design qualities of high, medium and low-speed diesel engines:* light weight and compactness, excellent thermal efficiency and extremely long life.

Advanced design features

The pistons are pressure-oil cooled. This gives very efficient heat dissipation and reduces liner and gas ring wear to a minimum. The roller bearing, disc-webbed crankshaft is exceptionally rigid within its tunnel housing, and in practice withdrawal is not normally necessary before 12,000 hours running. So low is big end bearing wear that in some cases the protective lead flash has been found to be intact when examined after 15,000 hours running!

Since the cylinder bore and stroke, and the majority of components, are identical in all models, spares stocks are considerably reduced. Servicing also has been greatly simplified because much thought has been given to accessibility and the removal of components. And the engines are suitable for both hydraulic and electric transmission.

World-wide application. Maybach rail traction diesel engines are in service all over the world and have built up an unsurpassed record for reliable and economic operation. Bristol Siddeley Maybach diesels power the new diesel hydraulic locomotives of British Railways Western Region and *over 200 engines have already been ordered by British Railways alone.*

For further information please write to: Maybach Sales Manager, Bristol Siddeley Engines Limited, PO Box 17, Coventry, England.

**Under licence from Maybach-Motorenbau GmbH*

BRISTOL SIDDELEY ENGINES LIMITED

COMMERCIAL AVIATION

London Airport

NORTH ATLANTIC TRAFFIC

QUESTIONS relating to London Airport were answered in the House of Commons on Monday by the Minister of Aviation, Mr. Duncan Sandys. Congestion in peak traffic periods should be relieved a little at London Airport North by the enlargement of the customs hall. Considerably more relief should be forthcoming in 1961 when the first part of the new terminal building in the central area was brought into use. It was also hoped to increase the handling capacity of the existing passenger building in the central area in time for 1961 summer traffic. The Minister announced that he had authorised British European Airways to operate a small number of night services with Comet 4B aircraft at the airport, subject to the noise level not exceeding that of piston-engined aircraft which were already allowed to fly at night without restriction. Noise tests carried out in the past few weeks showed this to be technically practicable.

Latest Edition of Air Guide

The latest edition of the *A.B.C. World Airways Guide* includes a new symbol for indicating basic I.A.T.A. fares. Where the new basic fares had been agreed they appear in the new style and the others will follow suit. There are also details of the summer schedules of airlines, most of which start to take effect on April 1, although certain flights will commence to operate later in the season.

British Traffic in January

It is provisionally estimated from statistical returns received to date that United Kingdom airlines' traffic on scheduled and inclusive tour services in January amounted to 26 million short ton-miles compared with 23 million and 20 million in January, 1959 and 1958 respectively, the increase being 15 per cent on the previous January. Capacity operated increased by 11 per cent to 47 million capacity ton-miles and the overall load factor rose from 54 per cent to 55 per cent.

P.A.A. Jets to Lisbon and Beyond

Jets will replace piston-engined aircraft on Pan American Airways southern route from New York to Rome via Lisbon, Barcelona and Nice, on June 1, it has been announced by Mr. Willis G. Lipscomb, vice-president traffic and sales. Flights will depart from New York on Mondays, Wednesdays and Fridays at 10 p.m., arriving in Lisbon at 9.15 a.m. the following day after a nonstop flight of 6 hr. 15 min. The present piston aircraft schedule is 10 hr. 50 min.

Eurocontrol Technical Group

The Eurocontrol Technical Working Group last week held a conference in London. This group, which comprises the representatives of the six Common Market countries and the United Kingdom, is responsible for working out a plan for a common air traffic control system for the upper air space over their territories in Western Europe, with the intention that ultimately the system devised should be run by a special international agency. The latest meeting, the 12th of the series, was a forerunner to a meeting of the Directors-General of Civil Aviation later this spring, where consideration will be given to a draft convention designed to enable the plan to be put into effect. The delegates also had the opportunity of seeing the Ministry of Aviation's Air Traffic Control Experimental Unit at London Airport.

Resumption of Conference with U.S.A.

Civil aviation discussions between the United Kingdom and the United States which began in Barbados on February 24 are to be resumed in London in a few weeks' time, having meanwhile been adjourned. Full opportunity was taken of presence of delegates in Barbados for a comprehensive review of route schedules to the bilateral agreement between the U.S.A. and the United Kingdom insofar as the Caribbean area was concerned. Subject to a few outstanding points which require further study, heads of delegations agreed to recommend to their Government expanded route schedules for this area. As regards other areas both delegations indicated that the exchange of views during the past few weeks had been highly beneficial and expected that resumed negotiations would lead to a mutually advantageous expansion of routes. The bilateral Air Transport Services Agreement between the U.S. and the U.K. provides basis for joint review of international air services conducted by the airlines of the two countries on routes to and from the respective countries. The consultation which was adjourned on March 17 was one of a series of meetings between representatives of the two Governments since the agreement was concluded in February, 1946. The last meeting prior to consultations in Barbados was held three years ago. Since that time both sides have wished to discuss a number of questions arising from air services over routes in the agreement and considerable progress has been made. The delegations returned home to study the proposals made.

Record North Atlantic Traffic

Record totals in North Atlantic passenger, cargo and mail traffic were established by the scheduled airlines during 1959 it has been announced by the International Air Transport Association. The total number of passengers carried on the scheduled and charter services of the 17 I.A.T.A. member airlines operating between Europe and North America reached a figure of 1,539,934, an increase of 19.2 per cent over 1958. Cargo increased 45.4 per cent to a record figure of 26,379,424 kg. (80,202,078 lb.) and mail carryings increased 15.4 per cent to a total of 12,498,706 kg. (27,554,647 lb.). The airlines carried 1,367,287 passengers on scheduled flights and 172,647 on charter flights. Scheduled passenger traffic rose by 14.6 per cent and charter traffic by 74.5 per cent as compared with 1958. Of the scheduled passengers, 294,160 (or 21.5 per cent) travelled in first-class, 64,362 (or 4.7 per cent) in tourist-class and 1,008,765 (73.8 per cent) in economy-class services. First-class and economy travel increased 15 per cent and 52.2 per cent respectively during the year, while tourist-class carryings fell off 76.6 per cent. The airlines completed 28,144 scheduled passenger flights during the year, 3.1 per cent less than in 1958, but offered 6 per cent more seats, or a total 2,071,041, than in the year before. The overall load factor for the year was 66 per cent, an increase of 4.9 per cent. North Atlantic scheduled traffic for the last quarter of 1959 totalled 275,809 passengers (up by 20.3 per cent over the same period in 1958); 10,217,698 kg. of cargo (up 45.9 per cent); and 4,020,396 kg. of mail (up 15.3 per cent). Of the 275,809 passengers during the last quarter, 69,346 went first class, 10,109 tourist and 196,354 in economy class.

PIONEER IN SCOTTISH BUSES AND AVIATION

The late Mr. JOHN C. SWORD, M.Inst.T.

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We greatly regret to record the death at the age of 67, after several years of ill health, of Mr. John Cuthill Sword, for forty years a prominent figure in the Scottish bus industry and twice a most eloquent and witty president of the Scottish Road Passenger Transport Association (1946-47 and 1953-54); his speeches at the annual banquets will long be remembered with delight. He began his business career in the bakery industry, but soon after demobilisation, following the 1914-18 war, was seized of the possibilities of the motor bus and decided to set up on his own account. Mr. Sword opened a service from Coatbridge to Glenboig, Annathill and Kilsyth in 1919. In November, 1924, he instituted the Midland Bus Service on the Glasgow-Paisley route; despite intense competition it survived and was extended to Ardrossan. His native town of Airdrie was connected to Glasgow and a central garage was established in Carlisle Road, Airdrie, for what became in a short while a fleet of 240 buses. London and Blackpool were later served by express workings. In 1929 a new Scottish Motor Traction Company, with L.M.S. and L.N.E.R. financial participation, was set up and Mr. Sword's interests were taken over by the S.M.T. group in February of that year, other acquisitions being placed under his management until the fleet reached a total of about 450. The Midland concern was then absorbed by the Scottish General Transport Co., Limited, as from April 1, 1932. The S.G.T. was a member of the British Electric Traction group from its formation in 1913 until November, 1931, when it was acquired by the S.M.T. Later in 1932 the title of Western S.M.T. Co., Limited, was adopted and Mr. Sword was appointed director and general manager. He also became a director of Central S.M.T. and W. Alexander and Sons. He relinquished the general managership after the British Transport Commission had acquired the S.M.T. group and was succeeded by his son, Mr. W. L. Sword, but he has continued to serve on the boards of several companies in the Scottish bus group. In the early nineteen-thirties, Mr. Sword was actively interested in aviation through Midland and Scottish Air Ferries, Limited. Mr. Sword had lived in Ayr in recent years and continued to pursue business affairs which ranged from agriculture to cinemas and catering. In addition he frequently participated in Airdrie activities and was made a burgess of the burgh in 1953 in appreciation of his services to his native town and the distinction he had attained in the business world. His personal interests were also wide and his beautifully-maintained collection of vintage cars is well-known in the transport industry. The memory of a pioneer of both bus and air service development will also be kept fresh by the cup for pitching and putting competed for by the ladies at the annual conferences of the S.R.P.T.A.

IN PARLIAMENT

Planning Board Explained

ADVISORY DUTIES ONLY

SOME clarification of the powers and responsibilities of the proposed planning board to be set up by the Government to evolve a scheme of reorganisation of the British Transport Commission was extracted from MR. JOHN HAY, the Joint Parliamentary Secretary, Ministry of Transport, when he replied to the debate on the B.T.C. Bill. The Bill received its second reading on March 23. Mr. Hay explained that the board will report to the Government and to the British Transport Commission jointly. It will not be "some kind of supernumerary body" wedged in between the Minister and the Commission to run the railways. It is not the intention that the board shall run or administer the railways. It is to be a purely advisory body to suggest the answers about what sort of size, shape and pattern of railways we need in this country, what are the future prospects for traffic, and so on.

The Government will be represented, the Commission, and also a number of people with great experience of large industrial undertakings in private hands. On the specific question of development of sites, which had been raised in the debate, he said that it was clearly a matter for the board whether there should be legislation to permit the B.T.C. to do this, to enable it to make use of its railway track for pipelines, its premises for car parks, and other things that any commercial enterprise would be entitled to do.

Earlier, Mr. A. WEDGWOOD BENN, principal transport spokesman for the Opposition, had criticised what appeared to be an entirely new principle of parliamentary accountability, namely, that there should be a committee appointed outside Parliament by the Minister which would have power over the Commission.

Decentralisation Satisfactory

He went so far as to admit that the Conservative plan of regional decentralisation since 1953 was going well—there was "no question about it"—but opposed the idea of regional accountancy, by which Conservatives seemed bemused. A load might start on a branch line in one region where it was very expensive to load and deliver. It might then go to marshalling in another, which might cost more money again, and then go through a part of the line of another region where, because of a much higher productivity, costs were very much reduced. It might then come to be unloaded in a fourth region where terminal charges were very high. What sense was there in dividing that operation up for costing and describing it as regional accountancy?

Prewar Accounting Arrangements

Before the 1939-45 war, he suggested, the accountancy of the four main-line companies was purely notional. He believed that 75 per cent of all railways receipts were pooled and the only reason was that a notional balance sheet was published—it did not reflect true accountancy divisions but the share of the pooled receipts which came to each company—in order to provide some sort of basis for dividend payment.

If the Minister thought that there should be a reorganisation of the Commission, he should either compel Sir Brian Robertson to carry out that reorganisation or dismiss him and put somebody else in who would reorganise the Commission and, if the Commission disappeared, go with it.

MR. M. KIMBALL said that there was an unhappy marriage in the Commission attempting to control small ports, coastal shipping and railways, which were their rivals in one undertaking. He hoped that this was the last Transport Bill which they would see and this the last year in which British Railways would have the responsibility, which it had continued to neglect, for small ports and wharfs round our coasts.

Fatality Rate on Birmingham Motorway

Between November 2, 1959, and February 29, 1960, the estimated fatality rate on M1 and M45 was 0.11 per million vehicle miles and the injury accident rate was 0.9. No comparable figures for A5 and A45 are available. (The Minister of Transport.)

Latest Snag in Vehicle Testing Scheme

MR. ERNEST MARPLES explained the reason for again deferring the introduction of compulsory tests for elderly road vehicles. A practical vehicle testing scheme, he said, demands some degree of uniformity and they decided that the test for brakes must include a practical test of braking performance. The performance standards required were embodied in a manual of guidance which was to be issued to those garages and local authorities which were to administer the scheme. He was now advised that there were legal objections to proceeding on this basis and that any performance standards required must be embodied in statutory regulations. The drafting of the regulations was proceeding urgently.

Smoking on the Lower Deck

DR. ALAN THOMPSON asked the Minister of Health if he would consult with the Minister of Transport with a view to securing nation-wide acceptance of the principle that the lower decks of public service vehicles should be restricted to non-smokers in order to protect passengers, particularly older ones suffering from chest complaints. He complained specifically of the recent Durham appeal decision. MR. DEREK WALKER-SMITH said he understood that the Minister of Transport allowed the appeal in the Durham case solely in the individual circumstances of that particular case. He accepted that in principle a ban on smoking could quite properly be made a condition of granting a route licence by the traffic commissioners.

No Relaxation on Transport Questions

Tackled about the current position regarding questions to him on day-to-day affairs of the B.T.C., the Minister of Transport adopted, as he said, the Earl of Chatham's dictum —"I am responsible for nothing but what I control." MR. WEDGWOOD BENN reminded him of a statement recently by the Leader of the House which (said Mr. Benn) was "intended to ease the situation." Did the Minister not realise that, unless a move was made by him and others with similar responsibilities which could be noticed, there would be no improvement. MR. ERNEST MARPLES replied that Mr. Butler had said that there was no very great scope for extension. He had said that Ministers could answer questions only on matters for which they had a recognised responsibility and went on to say: ". . . they may from time to time be concerned with other questions of broad policy affecting the industries."

B.T.C. LONDON CHEMICAL LABORATORY

First Centre for Investigation and Research

SINCE 1951 the activities of about a dozen chemical laboratories which were inherited by the British Transport Commission from the former railway companies have been co-ordinated. Most of these laboratories were unsuitable for modern needs, and as it has become increasingly necessary to provide specialised and expensive instruments, which are only economical if they are given the widest use centrally, it is intended to concentrate the chemical services in fewer laboratories at centres which will serve the whole system.

To this end, a new laboratory has been brought into use at Muswell Hill. The first of such centres, it accommodates the headquarters' staff of the chemical services, the London area chemical laboratory, the building materials laboratory and the corrosion laboratory, which were formerly at Euston, Stonebridge Park, Wimbledon and Derby respectively. It also replaces the Stratford laboratories of the former L.N.E.R., which were destroyed by enemy bombing during the 1939-45 war. Located on the site of the platforms of the former Alexandra Palace Station, and thus overshadowed by the grim bulk of Alexandra Palace itself, the new accommodation nevertheless provides ideal working conditions for the staff.

The London area chemical laboratory serves a large territory extending to Sheerness, Aldershot, Reading, Oxford, Leamington, Rugby, Peterborough and the Wash. It undertakes the routine testing of materials other than textiles; claims investigations into the causes of damage to goods in transit, and accidents involving dangerous goods; laboratory investigations for the B.T.C. Police; the examination of water supplies, fuel and foodstuffs; and the control of chemical manufacturing processes, such as oil blending, train lighting battery manufacture, electroplating, etc., and research problems arising in these fields. The new building completes the first stage in the reorganisation and expansion of the British Railways research department. When required, it will serve other British Transport Commission undertakings.

The corrosion and building materials laboratories serve all parts of British Railways. In the former are investigated problems of metallic corrosion in structures and equipment exposed to exceptionally severe conditions, and advice is given on the use of methods and materials of construction which may prevent corrosion and so result in financial saving. Since the large-scale adoption of diesel traction particular attention has been devoted to corrosion in the cooling systems of diesel locomotives. In the building materials laboratory investigations are carried out on new materials and in the rectification of defects in existing structures, e.g. the reinforcement of decayed brickwork. Research is also carried out into improvements in special acid and corrosion resisting cements and other materials.

The main laboratory, which undertakes analytical control work for the area chemist; right, equipment in the corrosion laboratory used to investigate this phenomenon in diesel locomotive cooling systems

Interior

Most of the laboratory floors are covered with p.v.c. Crestaline, or acid-resisting tiles, and the walls are in plaster or acid-resisting tiles where processes require such treatment. Ceilings are soundproof and, in the laboratories, flame resisting. The offices are similarly treated except that the floors have cork tiles. Services, which include water, electricity, gas, compressed air and vacuum, are distributed by two large vertical ducts extending from the bottom to the top of the building. These are connected below the basement floor by a horizontal duct and under the first floor by a full-width false floor, which allows flexibility in the placing of benches and services. There is a personal radio communication system for staff location.

In the sampling-room materials of all kinds are ground and sieved, or otherwise reduced, for analysis. Massive materials, however, are first broken down by a crushing machine in the cutting-room, which is also equipped with a bench lathe and tools so that a laboratory technician can repair instruments or make specially designed apparatus.

Appearance of B.T.C. research laboratories at Muswell Hill in North London

The two laboratories in the semi-basement are for carrying out corrosion investigations on a large scale and the study of building materials. Preliminary work for the building materials section takes place on this floor. In addition, there is a mixing-room where concrete and mortars can be mixed and moulded under controlled conditions. From this room an air lock gives access to a curing-room in which specimens are cured in air saturated with water vapour at a controlled temperature.

Corrosion: Building Materials

The design of this room is unusual in that control is effected by a curtain of water flowing down expanded-aluminium sheets on three of the walls. Not only does the water provide the requisite humidity, but it falls from a high-level tank fitted with a thermostatically-controlled electric heater so that the temperature of the room is also maintained by the water curtain. Water from the curtain is collected and recirculated. Concrete and mortar specimens are also cured by full immersion in water contained in polyester-glass laminate tanks. Both the corrosion and building materials sections require to work with aggressive gases and solutions, and these investigations are carried out in a separate room which might be described as a large fume cupboard. An exhaust fan draws the obnoxious gases away at ceiling level.

The ground floor is mostly taken up by administrative and other offices, but has a room, to seat 22 people, equipped for projection. The ground floor includes a testroom equipped with machines for testing building materials and plastics, and for compression, tensile and bending strength determinations. There are also instruments for measuring the contraction and expansion of specimens under controlled conditions.

Analytical Investigations

The first floor contains most of the laboratories, which are linked by a series of double swing doors. Analytical control, which is the responsibility of the area chemist, is mostly undertaken in the main laboratory, sometimes with the assistance of the claims laboratory and the more specialised investigations of the research laboratory. The main corrosion laboratory is also on this floor, together with the spectrographic and water laboratories. The latter is equipped for both chemical analysis and bacteriological investigations. A balance-room and photographic dark room provide a common service for the building, and the technical library is on this floor.

Outstanding among the equipment of these laboratories are photo-electric absorption meters, a polarograph, a flame photometer and a direct-reading spectrograph. They received a formal opening earlier this month by Sir Brian Robertson, chairman of the Commission, in the presence of Messrs. J. Ratter, member of the B.T.C.; T. M. Herbert, director of research, British Railways; and Professor D. M. Newitt, chairman of the B.T.C. research advisory council.

Sperry Gyroscope Co., Limited, opened 1960 with an announcement of price reductions covering a substantial range of marine equipment. The cuts affecting both home and overseas customers reduce 1959 prices by about 7½ per cent, saving between £100 and £200 on a typical comprehensive gyro compass installation. The new prices have been made possible by the fact that the large majority of the world's shipowners continue to specify Sperry equipment so that economic batch quantities can be passed through the production process.

LETTERS TO THE EDITOR

Great Central Line Meeting

SIR,—In your issue of January 2 this year you published an article dealing with the future role envisaged by British Railways for the ex-Great Central Line. This has been followed by the publication of so many letters on the subject that it is evident that numbers of your readers are keenly interested in the question.

Perhaps, therefore, you would be kind enough to make it known that at 2.30 p.m. on Saturday, April 9, in the Welbeck Hotel, Milton Street, Nottingham (near Victoria Station), a meeting will be held for discussion on the form of action best fitted to restore reasonable passenger services to this line. All interested are cordially invited to attend.—Yours faithfully,

E. L. KENWORTHY,
Secretary, The Great Central Association.
16 *Nadin Road, Wylde Green,*
Sutton Coldfield, Warwicks.

An Old Mack

SIR,—The interesting photograph on page 4 of your March 19 issue showing a vintage lorry still at work in New York, depicts, with little doubt, a Mack of the mid-twenties. Like the French Renault and certain other makes of the period, the American Mack featured a radiator located behind the engine.

I believe that the Mack Corporation is still a prominent producer of heavy-duty commercial vehicles in the U.S.A. to this day.—Yours faithfully,

GRAHAM S. LLOYD.
34 *Denmark Road, Gloucester.*

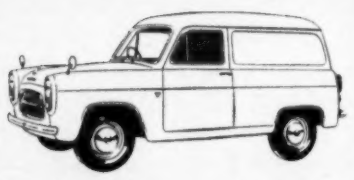
The Editor is always glad to receive letters from readers on subjects germane to the transport industry, but these should be written as concisely as possible. The opinions expressed therein must not, however, be regarded as having editorial endorsement. Where correspondents desire to use a nom-de-plume it is essential that the Editor should be informed of the name and full address of the writer as indication of good faith.

PIPING ABOARD THE TELLY!

That's an important ceremony still remaining for the Bosun's Mate to perform, as the great aircraft-carrier nudges her way towards the quayside. Already waiting is one of the 250 Ford vans with which Radio Rentals Ltd. deliver thousands of television sets weekly to homes all over Britain — including this floating home for men of the senior service.

All the nice girls still love a sailor, but today it's even truer that all the sailors who have to stay aboard love a telly! And it's a Thames van that speeds down to the docks with the wardroom and mess deck TVs—all ready to be installed as soon as the ship ties up.

Radio Rentals Ltd. depend upon their Ford Thames fleet for many other rush jobs, as well as for the regular servicing of their thousands of domestic customers. Once it was a set at short notice to keep the local police station up to date with *Dixon of Dock Green* . . . quite often it's a replacement receiver for some hospital staff anxiously awaiting *Emergency Ward* 10 ! Whenever the call comes, there's a sturdy, trustworthy Thames van to answer it—and that goes not only for Radio Rentals Ltd. but for other leading businesses and industries of every kind throughout the country. Your local Ford Dealer can tell you *why*. This week you might spend a highly profitable twenty minutes just getting the facts from him!



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SOME ASPECTS OF THE SHORT SEA TRADE

*2—Present and Future Developments**

By S. A. CLAYDON, Continental Traffic and Shipping Manager, Eastern Region, B.R.

OBJECTIONS to deferred rebates by liner conferences may be partly overcome by entering into an exclusive contract, which provides for part of the rebate to be given immediately. Or there is the exclusive contract which may provide for a preferential rate. Such engagements are most likely to be acceptable for larger shippers able to offer greater quantities of cargo. Finally, like any other club, the success of the conference system depends on the loyalty of members observing its regulations and on the effectiveness of the protection it offers against the outside competitors.

Notwithstanding these arrangements, the non-conference competitor exists and has in some cases proved sufficiently strong and lively to survive the rigours of competition. Such survivors are invariably foreign-owned—often Dutch—and it is of interest to note that in that country credit facilities for owners requiring new tonnage are well organised. The Export Finance Company offers credits exceeding 50 per cent of the value of the ship to foreign owners placing orders and to Dutch owners the ships' mortgage banks may offer up to 50 per cent of the value. In addition to that, certain yards have their own finance companies which may well give credits greater than the ships' mortgage banks. Such facilities are of great value to the small owner.

Mechanical Handling

It is a common saying that ships at sea earn money; ships in port do not. The short sea liner inevitably spends a far larger proportion of her working life in port than does the deep-sea vessel. Port expenses, particularly those relating to cargo handling, are a correspondingly heavy burden for the short sea operator. And over the past few years they have been constantly rising, particularly in the bigger ports, until they have now reached a level so high as to drive some operators to seek cheaper, smaller outports. Shipping services using these ports in South-East England are able to offer through rates to London from continental ports (sea freight to outport plus port charges plus rail or road carriage) lower than services using the Port of London itself (sea freight plus port charges).

It is not surprising, therefore, that during the past few years new developments have taken place to reduce the time a vessel spends in port and the cost associated with it. The use of mechanised equipment, including palletisation for sea carriage as well as port handling; roller conveyors; hand pallet trucks; fork-lift trucks; containers of various sizes, refrigerated or specialised for particular traffics, is increasing, but is hindered in some cases by the reluctance of port labour to accept such modernisation.

Quick Turnrounds

Perhaps I may quote from our own experience. At the end of 1958 we introduced a new ship, the *Isle of Ely*, into our Harwich—Rotterdam cargo service and have since put a sister ship into the Antwerp service. Built for containers and palletised traffic, cargo can be lowered practically into its final stowage position by the quay cranes, although fork-lift trucks can operate in the lower holds if required. By these means the ship is discharged, loaded and put to sea on the day of arrival. She has been designed to have speed enough to make the passage between ports overnight, so that she spends six nights at sea, three days in Rotterdam and four days (including Sunday) in Harwich, giving three sailings in each direction weekly. These quick turnrounds are achieved by a first-class crew of officers and men and a hard-working permanent staff of dock labour, who have the encouragement of an incentive system, of value to both management and staff.

Another example in the same vein is the service operated by our Danish friend, Det Forende Dampskibs-Selskab of Copenhagen, whose ships are well known in the Port of London, as at Harwich. The Harwich—Esbjerg service runs twice weekly in winter, rising to six times weekly in summer. This schedule is maintained by two ships, 3,900 g.r.t., which are allowed 19 hr. for the 370-mile passage and five hours in port. In the five hours in port at Harwich the following work is accomplished. Up to 320 passengers, luggage, mails, 24 motor cars, are disembarked, followed by up to 200 tons of cargo. This has to be completed in time to permit loading of a similar number of cars, mails, etc., and the embarkation of the out-going passengers. Partway through there is a change of shift of the dock labour handling the cargo, which inevitably creates a short hiatus. Similarly, the other side of the coin shows an equally speedy turnround at Esbjerg, where the work of loading is accomplished without benefit of quay cranes. The result of this is that with the aids of palletisation, roller conveyors, and other time-saving devices, the service can be maintained by two ships instead of three—a difference in capital investment in these days of almost £2 million.

Train Ferries

All these methods minimise the handling of individual packages when they are conveyed by the conventional cargo ship, which has altered its silhouette considerably over recent years by pushing its machinery to the after end, permitting the improved design of the *Isle of Ely*—van ships the Americans call them. I am convinced they have a long future before them. But there are two other types of ship and service, regarded as "competition" by the private enterprise owner, but, nevertheless, important sectors of the trade. I refer to train ferries and to what are rather inelegantly known as "roll-on-roll-off vehicular ferries." Train ferries are an established part of the shipping picture. So far as England is concerned, the first ferries were born of 1914-18 wartime necessity and subsequently bought when surplus to War Department requirements by a company formed for the purpose, Great Eastern Train Ferries, who entered into an engagement with the L.N.E.R. for the operation of a Harwich—Zeebrugge service which was started in 1924. The Great Eastern Train Ferries venture was only partially successful and it was afterwards bought out by its railway partners. Some 12 years later the Southern Railway opened the Dover—Dunkerque passenger and cargo ferry service.

Not only are the usual shipping operations avoided—cranage, stevedoring, quay trucking or barrowing, etc., but there are numerous other advantages. From the customer's point of view important points are that, except for H.M. Customs inspection, goods are untouched between sending and destination sidings. This reduces the need for packing—sometimes eliminates it for certain classes of goods. As packing may amount to 20 per cent of the gross weight on which freight has to be paid, this is of great value. Packing labour and Customs duty are sometimes saved for the same reason. Pilferage and damage are minimised. These advantages have brought the train ferries to the front of the cargo-carrying services and there is considerable room for further expansion.

Perhaps to us, as transport men, the great advantage of quick turnround and maximum ship utilisation is best exemplified by the train ferry services. I quote from current operation of the Harwich—Zeebrugge service. The ship takes perhaps 15 min. to berth as she has to propel herself astern into the U-shaped berth with the lifting bridge at the base of the U. Lowering the bridge takes perhaps 2 min. Fixing Customs locks and seals may take 30 min., after which some further 30 min. are required to shunt off the shipload of ferry wagons (equal to 50 common-users). Those wagons usually contain over 300 tons of cargo—discharged in an hour! Loading time is about the same and the ship can be away to sea in three hours, although we do in fact allow an extra hour for various other reasons.

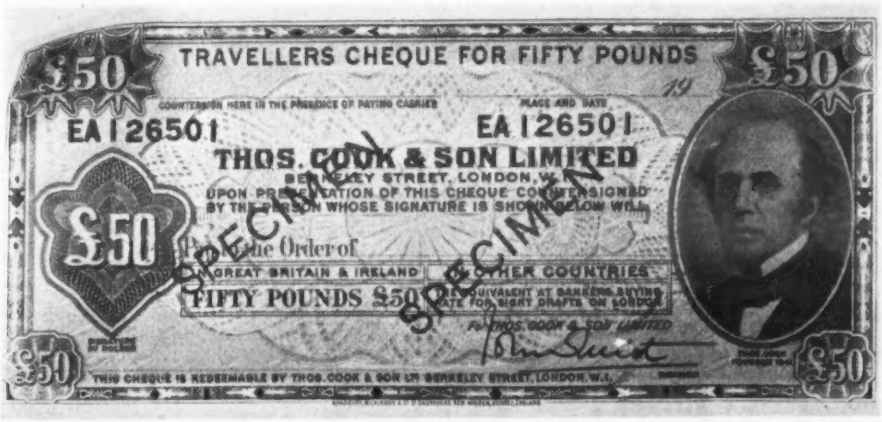
Road Vehicle Ferries

The road vehicle ferry is another development born of wartime necessity. Surplus landing ships tank were converted and used for this purpose. First exploited commercially in the Irish Sea between this country and Northern Ireland (a most favourable ground because no Customs barriers exist), their introduction and development in the short sea international trade is being watched with great interest by many shipowners. This type of ship requires only the simplest form of terminal—a sloping hard. The landing ships tank, having served their purpose, are on their way out; their age makes commercial success increasingly difficult to achieve with them, and the Atlantic Steam Navigation Company, a subsidiary of the British Transport Commission, introduced the attractive new *Bardic Ferry*, specially built as a road vehicle ferry, into their Tilbury—Antwerp service, which operates twice-weekly in each direction. A once-weekly Tilbury—Rotterdam service is to be started in the spring of this year.

This mode of transport offers through transit for self-propelled vehicles with drivers, or by loads on trailers and semi-trailers, stowed in position at the port of loading by tractors and similarly discharged by tractor at port of destination. The advantages it offers are in principle similar to those of the train ferry service. But where a C licence-holder delivers his product to a foreign buyer in his own vehicle he has clearly achieved prestige and his vehicle is an advertisement. But such a course may result in uneconomic use of the road vehicle and may put up costs to a high level. Apart from that, there are language and other difficulties likely to be trying for the ordinary lorry driver. For these reasons any great increase in Anglo-

(*Continued on page 12*)

* Second portion of an abstract of a paper presented to the Railway Students' Association in London. Part 1 appeared March 12.



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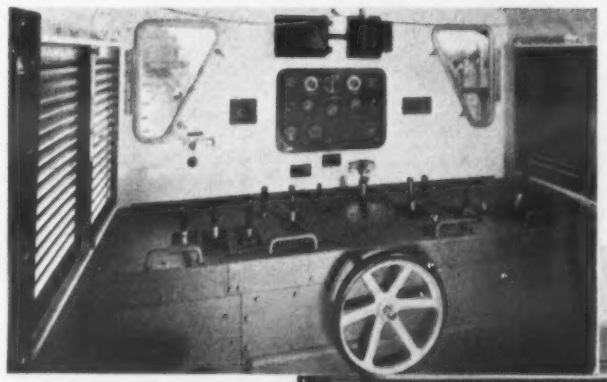
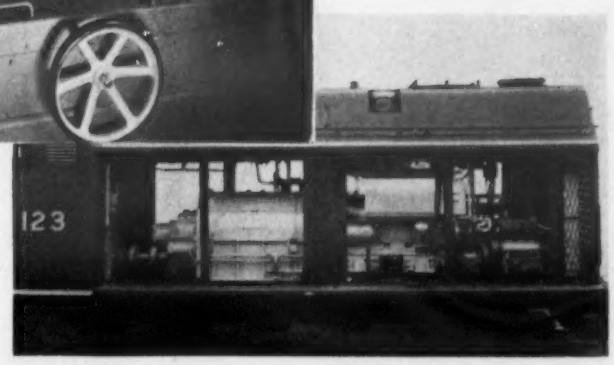
16 for Sierra Leone



The driving cab



The power unit: Note the Westinghouse exhauster and air compressor on the right

Sixteen of these Hudswell Clarke "Enterprise" Mark II Diesel Locomotives with Paxman "Hi-Dyne" constant horsepower engines and Dual-Fluidrive transmission are now operating in Sierra Leone.

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South Africa—Westinghouse Brake & Signal Co. S.A. (Pty.) Ltd., Johannesburg

Agents:—Bellamy & Lambie, Johannesburg

GLASS FIBRE BODYWORK

Prototype Bus in Service

INTERESTING experiment in the use of glass fibre which may have far-reaching effects on future bus body construction is being carried out by the Tilling Group Eastern Coach Works at Lowestoft with a pay as you enter single-decker for Eastern Counties Omnibus Co., Limited. The body, with the exception of floor and entrance steps, has been manufactured entirely from polyester resin-bonded glass fibre. The object is to see if there would be worth-while savings in building, maintenance and operating costs in a fleet. Testing of the prototype under service conditions may also reveal other advantages such as quieter running owing to the non-resonant nature of the material, and greater comfort in both hot and cold

Eastern Coach Works body, mainly of glass fibre, on Bristol SC chassis

weather because of the very low thermal conductivity of the material compared with aluminium.

Sides are composed of inner and outer skins with moulded window openings, wheelarches and doorways, and were manufactured in complete sections from the front bulkhead to the rear corners. All pillar straps and exterior mouldings were eliminated, and a perfectly clean and unobstructed exterior finish obtained. Between the two skins are upright glass fibre pillars of top-hat section, and longitudinal stiffening members in corrugated form. The whole side assembly is bonded together with epoxy resin.

The roof moulding includes the front canopy and destination indicator housing, and is in one piece from front to rear. The roof interior surfaces are formed of separate glass fibre panels screwed into place. The back section of the vehicle is in one piece and has the window and reversing lamp housing moulded-in. It is reinforced by top-hat section members bonded to it. The cab sides and front, cab doors and front bulkhead are all built up in double skin formation.

Timber Packings: Aluminium Gutter

Timber packings are fitted in the cavities between the inner and outer panels of the cab to provide means of attachment to the chassis, and along the bodysides for attachment of the seat rails. The sides, roof and back are flanged along the edges where they join so that they can be bolted together. Interposed between them is an aluminium T section extrusion which also forms a gutter along the sides of the roof. The purpose of this is to spread the load at the fixing points to

(*Continued at foot of next column*)

NEW REFRESHMENT ROOM

At Victoria Station

A NEW self-service refreshment room, *The Garden*, was opened to the public on March 23 at Victoria Station, London, by Mr. Leslie Phillips, the actor. The new premises, which are situated opposite platform No. 7, replace a former refreshment room as part of the programme of improvements to the British Transport Commission's hotel and catering premises throughout the country. The new room will supply light refreshments and freshly-cooked snack meals.

Designed in contemporary style, using green, black and yellow Formica, it has on one wall eight mural panels depicting typical Kentish scenes. The

The Garden Room at Victoria

marble floor is set in terrazzo and has been constructed specially for easy cleaning. The space around the tea-making and cooking area is set in two-colour tiles; table tops are of ivy leaf design, and seats are plastic covered. Stainless steel is used extensively for the countering. There is accommodation for about 50 people.

Improvements have also been made to the Chatham Room Restaurant, which is situated over *The Garden*. These include a new cloakroom, a powder room, and a small room which can be used either for receptions or as a small dining-room. The entire work has been carried out under Mr. S. P. Smith, chief works officer, British Transport Hotels and Catering Services.

(*Continued from previous column*)

avoid stressing the glass fibre round the bolt holes. Other components made in glass fibre are the power operated folding doors and motor housing, emergency door, driver's locker and parcel racks.

The resin used for the exterior parts of the vehicle is pigmented in Tilling standard red, and although the prototype body has also been given one coat of paint, it is expected that the colouring medium in the resin will make repainting largely unnecessary. The interior panels have also been pigmented in the required colours and have had no further finishing treatment. The bus, which is a Bristol-Eastern Coach Works SC type 35-seater, is in experimental service between Lowestoft depot and Rock Estate, Oulton Broad.

SHORT SEA TRADE

(*Continued from page* 11)

European road transport will most probably be by the trailer or semi-trailer, using continental tractors and drivers abroad, and English tractors and drivers in this country. Also, international road haulage commercial and administrative arrangements are in their infancy and much organisational and development work has to be done before the economy of balanced working by securing return loads can be widely achieved.

Consideration of the future involves thought on the evolution of European international politics and the evolution of the means of transport. Although economic factors exert great influence on the formation of political policies and may at times be paramount, yet, in general, businessmen can only succeed in international trading when favourable political conditions have been established and maintained. Even where these conditions exist, Governments may, as a result of representations by producers and manufacturers, cause Customs duties or quotas to be varied to an extent which will have a major effect on a trade, perhaps killing it. It is, however, a consolation to the international carrier, who is usually an unconsulted victim, that trade is reciprocal—a moderating influence which usually prevents such moves from being too violent in their impact.

Political Complications

These political considerations are visible at the present time when Western Europe has, in the struggle for closer co-operation, succeeded in creating, to the astonishment and dismay of many, two distinct trading groups. The arithmetical combinations become more complicated. The consequences of these groups becoming self-protecting, each within its own tariff walls, could be calamitous. Fortunately these dangers seem to be widely recognised and there is agreement among most that that should not be allowed to occur. There is, too, the hope that freer trade may follow the meeting of heads of State now in prospect and accelerate the tendency already in evidence. Devotion of more resources to promoting a higher standard of living in Communist countries could be of considerable benefit to the West.

The evolution of the means of transport during this decade should be of great interest. I have mentioned Hovercraft and hydrofoils as two new craft Apart from improvements to conventional ships and new types of ships, there is also experiment with inflatable rubber or plastics tanks and towable liquid containers of sausage- or snake-like appearance, which can be folded up when empty into a comparatively small convenient package. Not only are larger and more efficiently propelled aircraft coming into use, but the introduction of helicopters on intercity services will be a further important advance. And finally, the Channel Tunnel, a project which looms large in the minds of all transport men. The reports of the study groups are shortly to be presented and, I hope, published, when informed discussion will be practicable. Such a project would be a great act of faith. The variety of transport developments is greater than ever before. If established operators wish to maintain their share of the carrying trade they must continue to put new money into it. That necessity presents both opportunities and problems which will demand very careful consideration.

FORTHCOMING EVENTS

Apr. 4.—Inst.T. (Darlington). A. V. Williams, "Transport in New Towns." United House, Grange Road, Darlington. 7 p.m.
Inst.T. (East Anglia). John H. Bustard, "The Transport Ferry Service." 79 Thorpe Road, Norwich. 6 p.m.
Inst.T. Annual Shipping Lecture. R. Stewart MacTier, "The Future Development of Merchant Ships." Banqueting Hall, Fishmongers Company, E.C.4. 5.30 p.m.
Inst.Traf.A. Annual general meeting. Wig and Gown Hotel, Maidstone. 7.30 p.m.
S.E. A. E. Bingham, "Research Testing." Geological Society, Burlington House, W.1. 5.30 p.m.
I.R.T.E. (Southern). Annual general meeting. Palmeira Hotel, Hove. 7.30 p.m.
I.T.A. (Merseyside). J. W. Mitchell, "Some Elements of Food Distribution." Liverpool Corporation Passenger Transport Offices, Hatton Gardens, Liverpool. 7.15 p.m.

Apr. 5.—Inst.T. (Irish). E. G. Whitaker, "The Changing Pattern of Transport." C.I.E. Club, Earl Place, Dublin. 6.15 p.m.
Inst.T. (Midland). Annual general meeting and films. Engineering Centre, Birmingham. 6.30 p.m.
I.T.A. (Leeds). G. A. Ashley, "The Transport Ferry Service." Griffin Hotel, Leeds. 7.15 p.m.
I.R.T.E. (Eastern). Annual general meeting. White Hart Hotel, High Street, Newmarket. 7 p.m.

Apr. 6.—I.R.T.E. (Western). Annual general meeting and dinner. Vineyard Restaurant, Colerne, Wilts. 7 p.m.
E.R.S. R. Copson, "Hamburg's Electric Railways." 153 Drummond Street, N.W.1. 7.15 p.m.
R.C.T.S. (Lancs and North-West). Messrs. Kemp and Edwards. "B.R. Modernisation." B.R. Staff Association, Carnforth. 7 p.m.
R.C.T.S. (West Riding). W. Howcroft, "My L.N.E.R. Locomotive Experiences." Railway Institute, York. 7.15 p.m.
Inst.P. T. F. Brown, "Sulphonation of Lubricating Oil Fractions with SO_3." 61 New Cavendish Street, W.1. 5.30 p.m.

Apr. 7.—Inst. T. (Leicester). Annual general meeting. Empire Lounge, Leicester. 7 p.m.
Inst.T. (Merseyside). A. S. Mountfield, "A Port in Relation to the National Economy." Chamber of Commerce, Liverpool. 6.30 p.m.
I.R.T.E. (South Western). Annual general meeting and dinner. Lockyer Hotel, Lockyer Street, Plymouth. 7.30 p.m.
D.E.U.A. Annual Luncheon. Connaught Rooms, W.C.2.

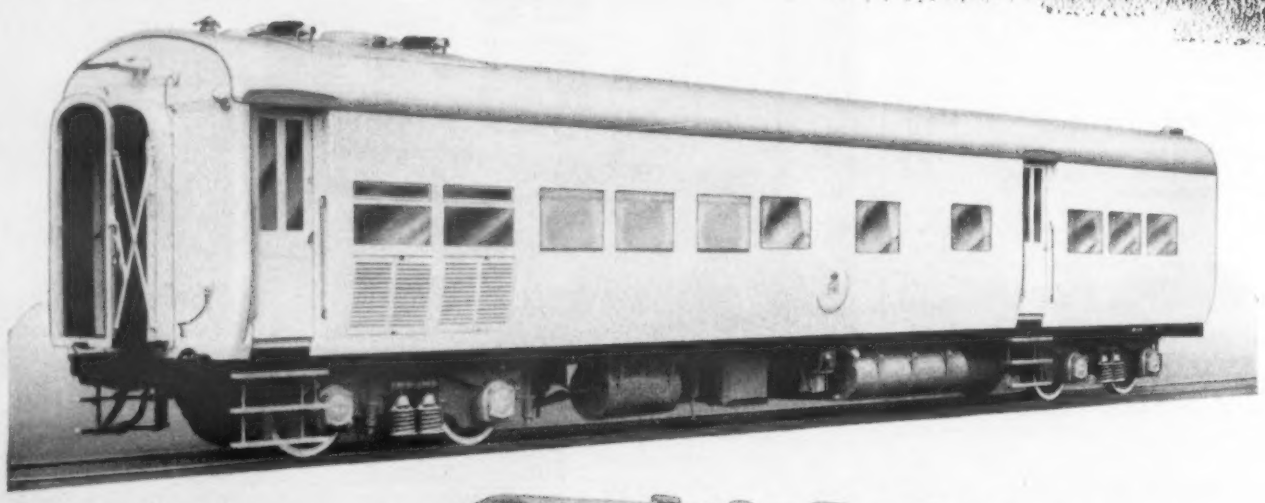
Apr. 8.—Inst T. (Northern). Annual general meeting. Royal Station Hotel, Newcastle. 7 p.m.
I.R.T.E. (South Wales). Annual general meeting. Grand Hotel, Westgate Street, Cardiff. 7 p.m.
R.C.T.S. B. D. J. Walsh, "The Norfolk Coast and Cromer Expresses of the G.E.R." R.C.H., Eversholt Street, N.W.1. 7.15 p.m.

KEY TO CODE

A.F.—Aviation Forum; B.I.R.E.—British Institution of Radio Engineers; D.E.U.A.—Diesel Engineers and Users Association; E.R.S.—Electric Railway Society; Inst.C.E.—Institution of Civil Engineers; I.E.E.—Institution of Electrical Engineers; I.R.S.E.—Institution of Railway Signal Engineers; I.R.T.E.—Institute of Road Transport Engineers; I.T.A.—Industrial Transport Association; I.Loco.E.—Institution of Locomotive Engineers; I.Mar.E.—Institute of Marine Engineers; I.Mech.E.—Institution of Mechanical Engineers; I.Nav.—Institute of Navigation; Inst.H.E.—Institution of Highway Engineers; Inst.P.—Institute of Petroleum; Inst.T.—Institute of Transport; Inst.Traf.A.—Institute of Traffic Administration.
L.M.R.L.D.S.—London Midland Region Lecture and Debating Society; L.R.T.L.—Light Railway Transport League; N.T.M.R.C.—Norbury Transport and Model Railway Club; O.S.—Omnibus Society; P.R.D.G.—Peterborough Railway Discussion Group; P.V.O.A.—Passenger Vehicle Operators Association; P.W.I.—Permanent Way Institution; R.Ae.S.—Royal Aeronautical Society; R.C.H.S.—Railway and Canal Historical Society; R.C.T.S.—Railway Correspondence and Travel Society; R.H.A.—Road Haulage Association; R.I.N.A.—Royal Institution of Naval Architects; R.S.A.—Royal Society of Arts; Rly.C.—Railway Club; Rly.S.A.—Railway Students Association; S.C.T.S.—Southern Counties Touring Society; S.E.—Society of Engineers; S.L.S.—Stephenson Locomotive Society; S.R.L.D.S.—Southern Region Lecture and Debating Society; S. Wales and Mon. R.D.L.S.—South Wales and Mon. Railway and Docks Lecture and Debating Society; T.R.T.A.—Traders Road Transport Association; W.R.L.L.D.S.—Western Region London Lecture and Debating Society.

A new way of applying colour coding paints to steel and other stocks is the aerosol spray, now available from DCMC, 2A Parkhurst Road, London, N.7, in a range of 10 colours, packed in 16-oz. aerosol containers. Paint formulations with exceptional adhesion on metals, wood and plastics are being used, it is claimed.

COACHES FOR RAILWAYS IN AFRICA . . .



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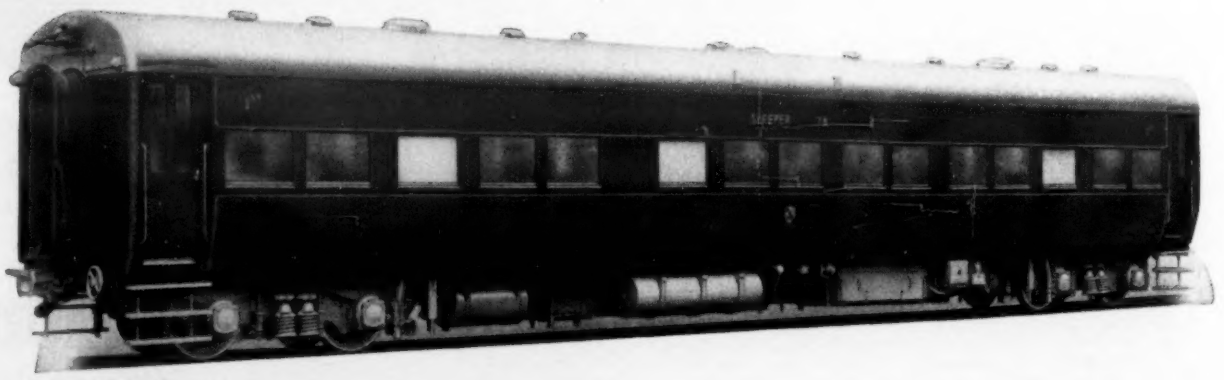

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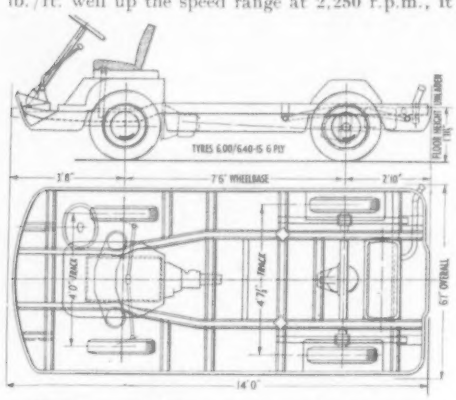
TELEPHONE SMETHWICK·1881
TELEGRAMS 'CARRIAGE SMETHWICK'

COMMERCIAL VEHICLE TEST

*Commer ¾-Ton Forward-Control Diesel Van**

REMARKABLE ECONOMY WITH PERKINS FOUR 99 ENGINE

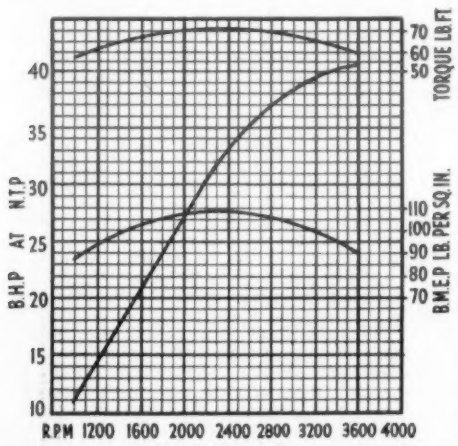
FIRST of the British ¾-ton vans to offer an optional factory-fitted diesel engine is, as we recorded in our issue dated January 9, the new Commer in that class. Our recent road test of one of these vehicles, which features the Perkins Four 99 diesel engine, provided evidence of quite remarkable performance and economy and outstandingly low noise level inside the vehicle under all running conditions. Although the Four 99 is the most uninhibited diesel engine to date in terms of rotational speed, being governed at 3,600 r.p.m., and develops its maximum torque of 71 lb./ft. well up the speed range at 2,250 r.p.m., it



Drawing showing basic understructure layout and principal dimensions of Commer ¾-ton forward-control range

still retains a large measure of the traditional diesel low-speed pulling power, keeping the number of necessary gear changes in traffic and on gradients to a minimum.

Commer engineers have made a point of providing true interchangeability of the petrol and diesel engines in the new 15-cwt. range. The same bearer brackets, mountings and engine cover pressings are used with both units and in fact the only installational differences are those of a few controls and minor plumbing, making conversion from petrol to diesel or the reverse a simple job for any garage with only a minimum of equipment. Diesel engine starting is controlled entirely by a single key-type switch on the instrument panel, which has positions for "ignition" (electrical services) on, Thermostart (for cold starting) and starter motor solenoid. The engine stop control is cable operated with the knob in the petrol-engine choke control position on the front of the engine casing below the driver's seat.



Performance curves of the Perkins Four 99 engine taken with air cleaner, fan, dynamo and testbed exhaust system fitted, barometer 30 in. Hg., temperature 60 deg. F.

Pressurised Cooling

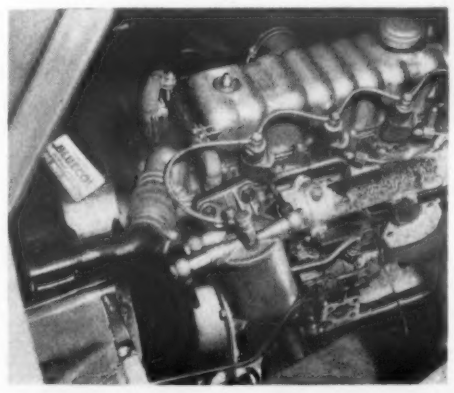
The hydraulically operated clutch and the gearbox and rear axle ratios are all standard and the only other differences with the diesel chassis are a 75 amp.-hr. battery (35 amp.-hr petrol) and a radiator cap providing 7 p.s.i. pressurisation in the cooling system instead of the 4-p.s.i. cap used originally with the petrol engine. This last difference is now eliminated as the 7-lb. cap is being standardised throughout the range. The diesel-engined van weighs about 150 lb. more than the petrol-engined equivalent, but still provides a margin of 17 cwt. for payload and driver between the kerb weight of a standard van and the recommended maximum running weight. The cost of any diesel-engined vehicle in the goods range is £112 more than a petrol-engined counterpart.

The range was fully described and a road test report on a petrol-engined van was included in our issue for January 9. Briefly recapitulating, the integral welded steel understructure forms a virtually flat platform suitable for accepting a wide range of bodywork of individual choice; additionally about a score of factory-built or factory-developed derivatives of the standard 15-cwt. van are available. The van itself has a capacity of 200 cu. ft., or 210 cu. ft. including the space alongside the driver, and is offered with sliding or hinged side doors and an additional side-loading door. Running units comprise the Commer four-speed synchromesh gearbox with floor-mounted gearchange, a semi-floating hypoid bevel rear axle and a front axle incorporating coil-spring independent front suspension and an anti-roll bar. Lockheed hydraulically operated brakes provide 146 sq. in. of lining area.

Flexible Performance

Because of its wide speed range and excellent flexibility, we found the diesel engine provided a performance in the fully loaded test vehicle only fractionally lower than the petrol engine. In our acceleration checks through the gears, the van reached 20 m.p.h. from rest in an average time of 6.1 sec., 30 m.p.h. in 11.7 sec. and 40 m.p.h. in 21.5 sec. These times were 1 to 2 sec. longer than those obtained in our earlier test of a petrol-engined van at similar weight over the same ground. Theoretically the diesel vehicle has a lower top speed by about 14 m.p.h., that is about 55 m.p.h. with the standard 5.125 to 1 axle. In practice, after lively acceleration up to about 45 m.p.h., the vehicle tested could be worked up to a recorded speed of 60 m.p.h. on the level and would exceed this speed on suitable downgrades. The hydraulic governor (or self-governing) of the C.A.V. DPA distributor fuel-injection pump apparently provides about the same degree of control as a pneumatic governor on an in-line pump, with 10 to 12 per cent run up under light load.

The good low-speed pulling, already mentioned, resulted in excellent acceleration in top gear and the times to go from 10 to 20 and 30 m.p.h. were 1 to 2 sec. better than with the petrol engine, being 9.2 and 18.3 sec. respectively. The diesel engine pulled remarkably smoothly at these very slow speeds, a characteristic particularly noticeable in our check for possible overheating, when the vehicle was driven slowly in the highest gear possible (to keep fan and air speeds at a low level) up Caterham by-pass. Most of this steady climb of something over a mile was made in top gear at 10 to 12 m.p.h. on full rack, the brakes being used occasionally to



Access to engine and distributor fuel-injection pump with hood lifted and side plate removed

check increasing speed. As for coolant temperature, the diesel naturally runs cooler than the petrol engine and the radiator on the test vehicle was half blanked off. Even with this, in an ambient temperature of around 52 deg. F., coolant temperature was steady at about 140 deg. F. under normal driving conditions, pointing to overcooling with fully exposed radiator at most seasons of the year in this country, and had risen only to 170 deg. F. at the end of the climb. The fitting of an adjustable radiator blind and temperature gauge might be a good investment for operators seeking optimum performance or, for diesel-engined passenger versions, for best performance from the heater-demister in cold climates.

Weight Distribution

The diesel engine naturally loads the front axle rather more than the petrol engine. A weighbridge check showed that, with the crew dismounted, the gross weight was 1 ton 18 cwt. and this was shared exactly between the two axles. Most of the additional weight of the crew would be over the front axle but, as the test vehicle had its load of weights distributed evenly over the length of the floor, it is evident that fair apportionment between the axles of practically any type of load would not be difficult to achieve. With weight distribution as it was, the vehicle had the same light handling characteristics, positive steering and good stability that we noted in our road test of the petrol-engined van.

Brake performance, which we had been unable

(*Continued on page* 14)

TEST RESULTS AT A GLANCE

Vehicle Details

MAKER: Commer Cars, Limited, Luton, Beds.

TYPE: Diesel-engined ¾-ton forward-control van.

ENGINE: Perkins Four 99 four-cylinder diesel; bore 3 in. (76·2 mm.), stroke 3·5 in. (88·9 mm.), capacity 99 cu. in. (1·621 litres); gross output 42·3 b.h.p. at 3,600 r.p.m. governed speed and 71 lb./ft. torque at 2,250 r.p.m.

TRANSMISSION: **Clutch,** hydraulically operated 8-in. (203 mm.) diameter single dryplate; **gearbox,** Commer four-speed synchromesh (exc. first), ratios 4·08, 2·34, 1·52 and 1 to 1 forward, 5·44 to 1 reverse; **driveshaft,** 2 in. diameter open tubular with Hardy Spicer needle-roller-bearing universals; **rear axle,** hypoid bevel gear with semi-floating halfshafts, ratio 5·125 to 1 standard, 5·625 to 1 optional.

BRAKES: Lockheed hydraulic (two-leading-shoe front); total lining area 146 sq. in. (942 sq. cm.).

TYRES: 6.00/6.04-15 six-ply rating.

WHEELBASE: 7 ft. 6 in. (2·286 m.).

WEIGHT: Diesel-engined hinged-door van complete in licensing order 1 ton 2 cwt. (1,117·6 kg.).

PRICE: Diesel-engined chassis, front end and doors £572; complete diesel-engined hinged-door van in primer £611.

Test Results

ROUTE: Standard route in Kent and Surrey with addition.
CONDITIONS: Warm and sunny.
RUNNING WEIGHT: 1 ton 18 cwt. (1,930·5 kg.) plus crew of two.
PAYLOAD: Equivalent of 14¼ cwt. (736·6 kg.) plus crew without extra fittings.
FUEL CONSUMPTION: Continuous running over 15 miles, 47 m.p.g. (16·64 km./litre) at 29 m.p.h. (46·4 k.p.h.); four stops per mile over 4 miles, 40 m.p.g. (14·16 km./litre).
GROSS TON/M.P.G.: 96·4 (34·7 tonnes/km./litre).
PAYLOAD TON/M.P.G.: 34 (12·2 tonnes/km./litre).
MAXIMUM GRADIENT CLIMBED: 1 in 4¼ (23·5 per cent).
TURNING CIRCLE: 39 ft. (11·9 m.) sweep, 36 ft. (10·97 m.) wheeltrack.
ACCELERATION:
Averages of four runs, two in each direction; through gears:
0-20 m.p.h. 6·1 sec.;
0-30 m.p.h. 11·7 sec.
0-40 m.p.h. 21·5 sec.;
in top gear:
10-20 mp.h. 9·2 sec.
10-30 m.p.h. 18·3 sec
BRAKING: Average of several emergency stops from 30 m.p.h. on dry tarmac 43 ft. 6 in. (13·26 m.); equivalent of 22·2 ft. per sec. per sec. or 0·69 g. overall deceleration. Consistent Don meter readings around 80 per cent.
ESTIMATED TOP SPEED: 60 m.p.h. (96 k.p.h.).
OVERALL FUEL CONSUMPTION: For 122 miles of mainly hard driving, including high-speed motorway and London suburban running and all standard test sections, 30 m.p.g. (1,062 km. per 100 litres).

* No. 469 in the MODERN TRANSPORT series of road tests.

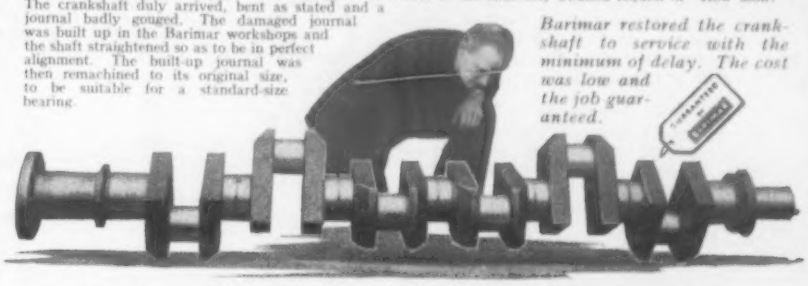
THIS "SHAFT" went "Home"

. . . but not until BARIMAR had repaired it!

This crankshaft had to be taken out of service. It is the crankshaft of a diesel engine which is part of the equipment that provides a Government establishment with electrical current.

THE DAMAGE to this CRANKSHAFT was done by a connecting rod that broke. As a result No. 3 big-end bearing of this large engine had come adrift, damaging the journal of the crankshaft and bending the shaft, which is 9 ft. 6 in. long. The establishment, being in a remote part of the country, depended upon the plant for its supply of electricity. Barimar was at once approached as to the feasibility of a speedy and reliable repair, and also to give an answer to the anxiously awaited request of "How soon?" The crankshaft duly arrived, bent as stated and a journal badly gouged. The damaged journal was built up in the Barimar workshops and the shaft straightened so as to be in perfect alignment. The built-up journal was then remachined to its original size, to be suitable for a standard-size bearing.

Barimar restored the crankshaft to service with the minimum of delay. The cost was low and the job guaranteed.



This skilled repair was carried out quickly and conscientiously, and put the crankshaft back into service with a minimum of delay. That shaft might well have been "scrapped" had not Barimar guaranteed a "good as new—sturdier than ever" repair, avoiding the need—and the inevitable delay—of an expensive replacement. How efficient!—For the simple reason that a Barimar repair tag is its own indisputable guarantee. WHATEVER THE DAMAGE—a letter, wire or phone call to Barimar is always a counsel of wisdom and saves time, money and anxiety. Barimar is always available any hour of the day or night.

Experts will gladly advise you at any hour of the day or night, in the event of a breakdown in machinery. Please remove fittings and consign all broken transportable parts CARRIAGE PAID. Post instructions or order. When it is impossible to transport damaged machinery Barimar experts will operate ON THE SPOT.

MOTOR TRANSPORT REPAIRS

Most Breakages to Motor Parts can be Repaired by Barimar at a Big Saving on the Cost of New Parts.

CYLINDER BLOCKS: Every kind of crack and fracture, cracked water jackets, broken bores, scored bores, damaged stud housings, cracked, burnt, pitted and sunken valve seatings.
CYLINDER HEADS: Broken and cracked heads, cracked water jackets, cracked and worn valve seats, chipped, warped or damaged faces, broken rocker standards, defective camshaft bearing housings, cracked stud holes, stripped plug threads. IRON OR ALUMINIUM.
CRANKCASES: Fractures caused by broken connecting rods and run big ends, broken-off bearer arms, smashed sumps, cracked stud housings, broken bearing and flywheel housings, stripped drain-plug threads. IRON, ALUMINIUM OR ELEKTRON.
CRANKSHAFTS: Broken across web or journal, cracked, scored, threads stripped, splines or tapers worn.
TRANSMISSION: Cracked or broken gearbox and axle casings, damaged gear teeth, worn splines and tapers, fractured shafts, cracked differential casings.

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For rear wheel fitment. Outpulls and outlasts any tyre of its kind. Specially designed dual-purpose non-directional traction tyre for use where off-the-road service is frequent and severe. Power Bite Traction design, with cross grooves, heavy shoulder lugs and circumferential ribbing, gives maximum pulling-power and performance. Tension-Dried Gum-Dipped cord for super-strength body.

EXPERIENCE COUNTS

45 Factories throughout the world.
Firestone total sales exceed £1,000,000 per day.

MAJOR LONDON ROADS IMPROVEMENTS

Blackwall Tunnel and Hyde Park Schemes

AS we recorded last week, tenders have been accepted by London County Council of Holland and Hannen and Cubbitts (Great Britain), Limited, for the Hyde Park Corner to Marble Arch improvement and of Balfour, Beatty and Co., Limited, for tunnelling work in connection with the duplicate Blackwall Tunnel.

The tender for the Hyde Park Corner to Marble Arch improvement accepted by the L.C.C. Town Planning Committee, amounting to £3,000,069, for all the road and tunnelling work, was submitted jointly with Fitzpatrick and Son (Contractors), Limited, and Lehane, Mackenzie and Shand, Limited. The acceptance was subject to the formal approval of the Minister of Transport. This brings together again Cubbitts Fitzpatrick Shand, the civil engineering group responsible for both the northern and southern ends of the London—Yorkshire Motorway and which is at present working on the West Riding section of Doncaster Bypass. At the southern end of the M1 the group completed the Watford leg of St. Albans Bypass ahead of schedule at the end of 1959.

Large-Scale Mechanisation

Commenting on the L.C.C. acceptance, a spokesman for Cubbitts Fitzpatrick Shand said that on both M1 projects a very large volume of the most modern plant and equipment had been employed and large-scale mechanisation would also mark the Park Lane operation. "With the L.C.C. we are setting ourselves two objectives: High speed of construction and least possible temporary inconvenience to the London public. Detailed operational planning is now in progress so that large-scale constructional work can start at an early date."

The scheme comprises a four-lane underpass between Piccadilly and Knightsbridge; the provision of a roundabout for the circulation of other traffic at Hyde Park Corner with a subsidiary roundabout north of Apsley House; the conversion of Park Lane and the East Carriageway of Hyde Park for one-way traffic with connections so that together they form a twin carriageway outside the park with a wide central reservation and roundabouts at Marble Arch; and 15 pedestrian subways. A flexible plan for traffic while road works are being carried out and a programme for work phasing has been agreed with the police and others.

Work is expected to begin on May 1 and will take 28 months to complete. It will be carried out by the contractor under the direction of the council's chief engineer, Mr. J. Rawlinson, assisted by the senior divisional engineer, Mr. F. M. Fuller, and assistant divisional engineer, Mr. A. J. H. Clayton. Mr. H. Iorys Hughes has prepared the design drawings and bills of quantities for the underpass and subways. The laying out of the islands and the central reservation designed by the architect to the council, Mr. Hubert Bennett, will provide a practical and pleasant setting for the three main areas around which traffic will circulate.

Plan of the duplicate Blackwall Tunnel

Park Extension

At Hyde Park Corner, the intention is to continue the effect of parkland between Green Park and Hyde Park by creating one large grassed island. The processional route will cross this island through the Wellington Arch, which will be in the centre of the island. Paths will connect the various points where pedestrians will enter and leave the island and the remainder of the island will be grassed, with provision for seating.

With the construction of the new road beside Apsley House, the building will be free-standing and the Ministry of Works proposes to face its flank with Bath stone. Similar treatment will be desirable for the building opposite at 144 Piccadilly. Pedestrian subways will link the central island with surrounding points.

At Marble Arch, the large island to be enclosed by the traffic routes will be divided by a link road but it is intended to treat the whole island as one. At the east end, the processional route will pass across the island and on the axis of Marble Arch. There will be pedestrian subways to the island.

To avoid an excessive length of subway between Bayswater Road North and Hyde Park by way of the central island, an area at the west end of the island will be excavated, so that pedestrians may come out into the open air at this point and, if they wish, reach the upper level by steps. The pedestrian link between the east and west ends of the islands and the two sets of subways (on the Bayswater Road side and Oxford Street side respectively) will run along the north side of the lawns, with a small pedestrian underpass under the link road. By a careful arrangement of the small retaining and boundary wall provision will be made for seating accommodation with a south aspect.

Preliminary Works

The central reservation between Park Lane and the Eastern Carriageway will be treated as a simple strip of parkland with a footpath running along its length. Pedestrian access will be provided by means of subways.

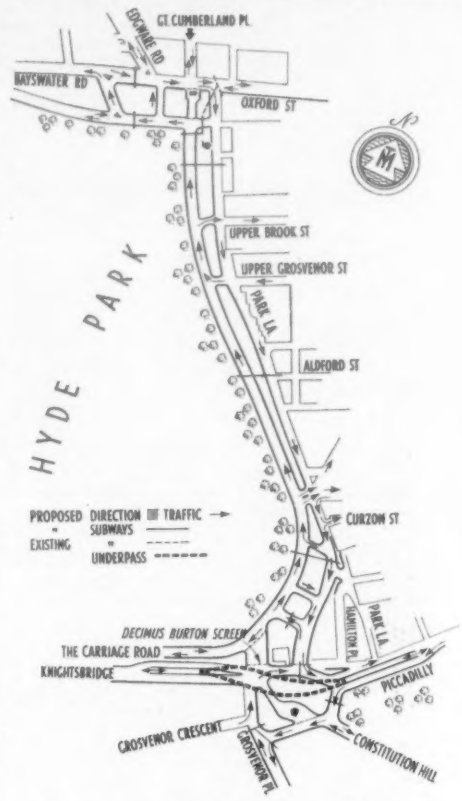
The sum of £1,765,000 has already been voted for the acquisition of property and for preliminary works in connection with the improvement. The diversion of some 1,200 ft. of the King's Scholars' Pond relief sewer—a major undertaking in itself—has been completed (contractor, W. and C. French, Limited) and the work of diverting the pipes, mains and cables of the Post Office, Gas, Water and Electricity Boards, the London Hydraulic Power Company, and the Exchange Telegraph Company, is well advanced. Estimated total cost of the whole scheme is £5,380,000.

Blackwall Tunnel

The Minister of Transport has agreed to pay 75 per cent of the cost of the duplicate Blackwall Tunnel under the Thames, the contract price of which with Balfour, Beatty and Company is £3,935,799. The work, comprising the construction of the cast-iron lined portion of the new tunnel—a length of 2,850 ft.—with working shafts, pilot tunnels and ancillary caissons, will begin early in April and is estimated to take 42 months.

The new tunnel will be situated approximately 250 yds. downstream of and roughly parallel with the existing Blackwall Tunnel and will consist of a cast-iron tube with internal diameter of 28 ft. 2 in., accommodating a two-lane carriageway 20 ft. wide, with footways for maintenance purposes only. When the new tunnel is completed there will be a one-way traffic system; northbound traffic will use the existing and southbound the new tunnel.

Messrs. Mott, Hay and Anderson (for whom Mr. J. Kell is the partner dealing with the scheme) are responsible for the work in association with the London County Council's chief engineer, assisted by the senior divisional engineer. The resident engineer will be Mr. G. P. Coleman.



Layout of the Hyde Park Corner to Marble Arch improvement

The remainder of the works not covered by this contract includes the construction of the shallower end sections of the tunnel, the north and south approaches, the lining, ventilation and lighting of the tunnel together with the provision of drainage pumping plant. These will be carried out under the direction of the council's chief engineer and will take a further period of about 18 months to complete.

★

COMMER ¾-TON DIESEL VAN

(*Continued from page* 13)

to assess except in a general way during our earlier test because of wet roads, was found to be well up to the general level of performance when measurements were taken on this occasion. All wheels could be locked on dry tarmac or concrete with fairly heavy pressure on the pedal and control was sufficiently sensitive for the brakes to be held just below locking point and so to obtain minimum stopping distances. In a series of simulated emergency stops from 30 m.p.h. on dry tarmac, using the chalk-firing magazine to mark the road where pressure was first applied to the pedal, the minimum stopping distance recorded was just over 40 ft. and the average was 43 ft. 6 in. Don meter readings in these stops ranged between 75 and 80 per cent, while in handbrake-only stops from about 20 m.p.h., the Don meter recorded 30-32 per cent.

Fuel Consumption Bonus

The biggest and immediate bonus expected in the switch from petrol to diesel operation is fuel economy and in this the Four 99 engine in the Commer did not disappoint. The van covered our standard 15-mile out-and-back route between Limpsfield Common and Riverhead at an average speed of 29 m.p.h. for a fuel consumption of 2.55 pints—giving the figure of 47 m.p.g. The route during our run was fairly free of traffic and not quite representative of normal conditions; perhaps a rather lower figure than that obtained would be more likely in normal non-stop service on country main roads. Our simulated delivery service check, making four stops in each mile, was also run at a time when traffic was unusually light and the result obtained of 40 m.p.g. was probably rather better than might be looked for from vehicles operated mainly in that type of service.

An indication of what the vehicle will do driven hard in the fully laden condition was given in our overall fuel consumption check. The day's running totalled 122 miles and included 20 miles at high speed on the motorway, about 20 miles in London suburban traffic and all the stop-start and low-gear work of our various tests, in which consumption worked out at 30 m.p.g. This might well have been rather better but for a slight fuel leak in the temporary plumbing of the additional test tank, which was detected (and quickly rectified without charge at Tattersalls Service Station) by the Caterham roundabout, about half-way through the test, but fortunately before the other fuel checks were made.

Already versatile in the number of goods and passenger derivatives offered, the Commer forward-control 15-cwt. range is given increased appeal by making provision for the optional diesel engine. Even where fuel consumption is not the main consideration, and the gains in this direction are probably marginal for low-mileage vehicles when weighed against the additional cost, fleet operators can opt for the diesel engine to gain the advantages of standardised fuel supplies and engine and component maintenance safe in the knowledge that there will be no penalty of reduced performance and speed or noisier operation.

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SOCIAL AND PERSONAL

Minister Visits Southampton

CONTINUING his series of visits to the shipbuilding areas of Britain at the request of the Minister of Transport, Lord Chesham, Joint Parliamentary Secretary to the Ministry, visited shipyards and ship repairing works at Southampton last week. The tours are bound up with the transfer of responsibility for the industry from the Admiralty to the Ministry of Transport. On Thursday, Lord Chesham visited John I. Thornycroft and Co., Limited, at its Woolston and Northam yards and its works in the docks. After lunch, a visit to the Harland and Wolff repair works, and the British Transport Commission dry docks was planned. He also met representatives of both sides of the industry to discuss shipbuilding and shiprepairing in Southampton.

* * *

Mr. A. Dean, M.Sc., D.I.C., M.I.C.E., chief civil engineer, North Eastern Region, B.R., has been appointed assistant general manager (modernisation) of the region.

* * *

Mr. L. B. Marson has been appointed assistant adviser (special projects), B.T.C. He was previously development officer, traffic department, B.R. central staff. Mr. Marson joined the former N.E.R. at Beverley in 1921. After service in the commercial and operating departments he held posts as trains inspector and district signalling inspector and controller. Mr. Marson served in the Royal Engineers from 1939 to 1945. He was D.A.D. Tn.

Mr. L. B. Marson

Railway Operating at the War Office, A.D. Tn. (Railway Operating) Planning Staff, First Army, and served with the First Army, A.F.H.Q., and 18th Army Group in North Africa, being mentioned in dispatches. Subsequently he organised the production and assembly of Mulberry harbour at Southampton for D-day and commanded the Home Railway Group with the rank of colonel. Returning to the L.N.E.R., Mr. Marson was employed as supernumerary assistant district superintendent, Hull, and then as senior assistant, works, chief general manager's office, L.N.E.R. On nationalisation he was appointed works and civil defence officer, B.T.C., and from 1954 acted as assistant to the general manager (productivity), Eastern Region. In 1955 he was made modernisation assistant, chief operating and motive power officer's department, British Railways.

* * *

Mr. H. R. Gomersall has been appointed regional planning officer, Eastern Region, B.R.

* * *

Mr. Edmund Phillips, who retired on March 31 as director and general manager of Red and White Services, Limited, Chepstow, commenced his transport career as bus driver with the Griffin Motor Company at Brynmawr in 1920. Three years later he was made an area manager and after similar appointments with other local bus operators in 1930 he was made area manager for Red and White Services. A year later he was made traffic manager of the company and in 1940 he became general manager. An appointment to the board followed in 1945, and he continued in these capacities after the acquisition of the undertaking by the B.T.C. Since 1951 he has also been chairman of Associated Motorways at Cheltenham.

Mr. E. Phillips

* * *

Mr. M. H. Hankinson has been appointed planning officer (electrification and general), general manager's officer, Eastern Region, B.R.

* * *

Mr. G. Turvey has been appointed as from April 1, assistant secretary of the Traders Road Transport Association, when Mr. H. R. Featherstone became secretary. Mr. Turvey was previously with Associated Electrical Industries, Limited.

* * *

Mr. C. N. Graddon (transport officer of the Royal Borough of Kensington) has been elected chairman of the London division of the Industrial Transport Association. The vice-chairman is Mr. A. J. H. Melton (traffic manager, Wiggins Teape and Co. (1919), Limited).

* * *

Mr. R. Stewart MacTier, C.B.E., partner in Alfred Holt and Company, and a director of Glen Line, Limited, will deliver the seventh annual shiping lecture arranged by the Institute of Transport on "The Future Development of Merchant Ships." The meeting will take place in the banqueting hall of the Fishmongers Company, London Bridge, E.C.4, at 5.30 p.m. on April 4. The building will be open for inspection from 5 p.m. and also after the meeting. Admission will be by ticket only.

* * *

Mr. W. C. Brudenell, B.T.C. publications officer, will retire on April 5. Mr. Brudenell joined the London and North Western Railway in 1915 in the general manager's office at Euston. In 1933, when the L.M.S.R. established its first film unit, he was placed in charge, and in 1943 became assistant for films and photography. In 1948 he was appointed to the Railway Executive as Editor of *British Railways Magazine*, and in 1954 became publications officer with the B.T.C.

Bristol Aircraft

IN view of the forthcoming transfer of Bristol Aircraft, Limited, to the British Aircraft Corporation, Limited, a number of changes has been made in board membership and executive appointments. Rear Admiral Sir Matthew Slattery and Mr. P. G. Masefield have resigned from the board and have relinquished their appointments as chairman and managing director respectively. (Sir Matthew Slattery remains a director of the Bristol Aeroplane Co., Limited, which retains its holding in Short Brothers and Harland, Limited, of which he is chairman and managing director.) Sir Reginald Verdon Smith has been appointed chairman of Bristol Aircraft, Limited. Dr. A. E. Russell, hitherto chief engineer of Bristol Aircraft, Limited, has been appointed technical director. He has retired from the board of the Bristol Aeroplane Company in order to concentrate exclusively on the affairs of Bristol Aircraft, Limited. Mr. J. F. Harper, hitherto assistant managing director of Bristol Aircraft, Limited, has been appointed director and general manager. Mr. D. J. Farrar, hitherto chief designer (guided weapons), has been appointed chief engineer (guided weapons); Dr. W. J. Strang, hitherto chief designer (fixed wing aircraft), has been appointed chief engineer (aircraft). Mr. Farrar and Dr. Strang have been appointed to the board of Bristol Aircraft, Limited. Mr. H. Giddings, hitherto assistant chief engineer, has been appointed chief development engineer.

* * *

Mr. Miles B. Reid has resigned from the board of the Mobil Oil Co., Limited.

* * *

Mr. R. L. Charlesworth has been appointed commercial officer, Western Region, B.R.

* * *

Mr. C. P. Hopkins has replaced Mr. W. H. F. Mempsted on the board of Southdown Motor Services, Limited, the latter having resigned.

* * *

Mr. R. H. Brooks, assistant secretary, has been appointed secretary of Red and White Services, Limited. He succeeds Mr. G. A. Major, who has been appointed general manager of the company.

* * *

Mr. E. G. Jones, technical manager of the Pollard Bearing organisation, has left the United Kingdom on the first stage of an intensive tour of the company's branches, agents and customers overseas.

* * *

Following upon his retirement as secretary of the Traders Road Transport Association, Mr. F. D. Fitz-Gerald, O.B.E., F.C.I.S., has been appointed secretary of the National Road Transport Federation, as from April 1.

* * *

Odhams Press, Limited (parent company of Odhams (Watford), Limited, printer of MODERN TRANSPORT), announces that Mr. A. C. Duncan will retire from the chairmanship in June. His successor will be Sir Christopher Chancellor, vice-chairman since last year.

* * *

Mr. R. Gore, M.I.Mech.E., A.M.I.P.E., at present production services manager, has been appointed to the newly-created post of facilities manager of F. Perkins, Limited, Peterborough; he is responsible for planning, plant, toolroom operations, industrial engineering and safety.

* * *

Mr. J. R. Cotterill, M.I.Mech.E., has been appointed manager of the outside services department at the Witton works of the General Electric Co., Limited. This is a new department formed to co-ordinate erection, commissioning, and post-commissioning of electrical plant.

* * *

Mr. Cecil Garstang, chief assistant general manager, Thomas Cook and Son, Limited, has been appointed to the boards of Thomas Cook and Son (Australasia), Pty., Limited, Thomas Cook and Son, Incorporated, and Thomas Cook and Son, Limited (South Africa).

* * *

Mr. R. M. Wynne-Edwards, D.S.O., O.B.E., M.C., M.A., M.I.C.E., is to be chairman of the Road Research Board for the period April 1, 1960, to March 31, 1965. He succeeds Mr. E. John Powell. Mr. Wynne-Edwards is joint managing director of Constructors, John Brown, Limited.

Mr. J. P. Young, divisional manager, Scottish Division, B.R.S., last week received from Queen Elizabeth, the Queen Mother, at Buckingham Palace the O.B.E. awarded him in the New Year Honours List. With him were Mrs. Young and their daughter

Mr. J. W. Finnis, hitherto southern area manager, tank haulage department, has been made tank haulage manager, Pickfords Division, B.R.S., in anticipation of the forthcoming retirement of Mr. W. A. Bridge, O.B.E. Mr. Finnis was educated at Brighton College and entered the service of Pickfords, Limited, as a trainee in 1933. In 1939 he was appointed London manager of Pickfords tank haulage department, and following the co-ordination of the tank haulage activities of acquired undertakings with those of the Pickfords Division, he became southern area manager in 1951.

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IMPORTANT CONTRACTS

T.C.A. Orders British Equipment

BRITISH-MADE passenger loading equipment has been selected by Trans-Canada Air Lines, which has ordered 23 mobile air stairs for use with its new 127-seat DC8 jet air liners. The order is worth about £77,000. The unit selected, which was illustrated in MODERN TRANSPORT for September 12, 1959, is built by H. W. Edghill and Co., Limited, Hook, Hants, to T.C.A. specification and is mounted on a Karrier Gamecock chassis to provide rapid self-mobility and high manoeuvrability. They will be used simultaneously at forward and rear doors of the big jets. The staircase itself is electro-hydraulically operated, controlled from the driver's cab, and is adjustable in height from 9 to 13½ ft. Passenger protection from the weather is provided by a resin-glass canopy, which telescopes as the stairs are adjusted for height. Two of the units will be used at London Airport.

G.P.S. Comet 4 Simulator Shipped

A Comet 4 simulator, designed and manufactured by General Precision Systems, Limited, for Aerolineas Argentinas, left the builder's factory at Aylesbury recently for shipment to South America, after acceptance tests had been completed by the airline instructors.

Russian Transport Equipment for Argentina

A report says that Argentina is to purchase railway wagons and traction equipment, motor levellers and tractors for use in road construction and hydro-electric equipment from the U.S.S.R. The purchase will be financed by using the outstanding balance, estimated as some $50 million, of the $100 million loan for the development of the oil industry.

Tractor Shovels for Sweden

Bray Construction Equipment, Limited, Feltham, has just received an order worth more than £35,000 for 10 tractor shovels powered by Perkins P6 industrial diesel engines from its agent, R. A. Dahlgren, of Lidkoping. This follows a consignment of four similar machines recently dispatched to Sweden, which are said to have been sold before they arrived. The Bray shovel is hydraulically operated and embodies four-wheel drive, power-assisted steering and four-wheel brakes. Fitted with a Perkins P6 80-b.h.p. diesel engine, torque converter and epicyclic gearbox, it has a top road speed of 11 m.p.h.

D.B. Tractor Records

In the last two months David Brown tractor sales have risen to a level unequalled since the peak selling year of 1955. During January and February the David Brown Tractor Division dispatched 43 per cent more tractors than in the corresponding two months of 1959, and the figures are still rising. This striking upsurge in demand is said to be directly attributable to the introduction last December of the 950 Implematic tractor, which the manufacturer claims has the most comprehensive specification of any machine of its type in the world. The current position is that orders in hand for 950 and 850 Implematic tractors are between two and three times higher than at this time last year, representing between four and five months' full production at recently increased rates.

Laing Buys Executive Aircraft

McAlpine Aviation is to deliver an eight-seat Piaggio P166 executive aircraft to John Laing and Son, Limited. The aircraft will be based at Luton Airport and will be used for flying the firm's executives to the sites of projects under construction. Approximate cost of the aircraft with full airways radio and navigational equipment is £48,500. McAlpine Aviation already operates a similar aircraft for Sir Robert McAlpine and Sons.

More Leyland Diesels for Finland

Another bulk order for diesel engines for Finnish vehicles has been received by the industrial units division of Leyland Motors, Limited. Placed by Oy Suomen Autoteollisuus AB, the order calls for 600 Leyland O375 diesel engines fitted with C.A.V. fuel-injection and electrical equipment and is valued at over £250,000. The contract is the latest of a series from Finland which now bring the total of Leyland engines ordered to over 6,000.

Japanese Rails for Chile

The Chilean Under-Secretary for Transport has announced that all the permanent way of the national railway system will be renewed at the rate of 250-300 km. a year. In 1957, the total length of the State-owned track in use was more than 6,000 km. The contract for the supply of 112,400 tons of rails for replacement of 1,000 km. of track over the next four years has been awarded to the Japanese firm of Mitsubishi Kaisha, which offered to supply rails using steel made from Chilean iron ore mined at Las Adrianitas. The c.i.f. cost of the rails is about $19½ million, which includes interest at 7½ per cent; payment will be spread over 10 years.

New Eastern Region Contracts

The Eastern Region of British Railways announces the following contracts:

The Cementation Co., Limited, London, S.E.11, for concrete culvert and embankment in replacement of bridge between Radcliffe-on-Trent and Netherfield and Colwick.

Thermit Welding (Gt. Britain), Limited, Rainham, Essex, for rail warming equipment.

The General Electric Co., Limited, London, W.C.2, for structural steelwork for 10 gantry spans and lanterns, lamp control gear and cast-iron weatherproof boxes at Chingford and Enfield Town.

Drake and Gorham (Contractors), Limited, London, S.W.1, for e.h.v. and m.v. cables, switchgear, transformers, rectifier and associated equipment at Norwich Thorpe.

Thomas Fletcher and Co., Limited, Mansfield, for reconstruction of parapets and repairs to arches of Frodingham Viaduct between Althorpe and Scunthorpe and Frodingham.

Associated Electrical Industries, Limited, London, N.W.10, for modifications to existing 33 kV 750 mVA switchgear at Ramsden Bellhouse, Rayleigh and Prittlewell substations.

Standard Telephones and Cables, Limited, London, E.16, for 12-channel carrier telephone systems and associated terminating equipment and test apparatus in the Kings Cross, East Ham, Tilbury Riverside and Southend East and Kings Cross, Seven Sisters and Broxbourne areas.

The Cementation Co., Limited, London, S.E.11, for remodelling of station and construction of dive-under line for Clacton branch (excluding two bridges) at Colchester.

SHIPPING AND SHIPBUILDING

Building Prospects

SPEAKING at the annual dinner of the Royal Institution of Naval Architects in London last week, Lord Hailsham, Lord President of the Council, thought that shipbuilding output in the United Kingdom might fall heavily over the next five years. If this were so the industry's ultimate recovery and its very survival would depend upon its ability to compete with highly efficient foreign yards. "Are British yards," he asked, "doing enough to apply new techniques to shipbuilding compared with some of their rivals? Are we satisfied that our yards are making the best use of their space—and are there not perhaps too many of them? Perhaps the future lies with fewer and larger units. Are we spending enough on research?"

Lord Hailsham said that, according to the latest available figures, individual firms spent about £1,500,000 on research in 1958—plus another £1 million or so spent by the research organisations. He knew of no research on production techniques and methods at present being undertaken in organisations representing the industry. He also asked whether satisfactory machinery had been developed for smoothing out conflicts with the traditional views on the allocation of jobs. The Institution celebrates its anniversary this year and has been accorded the prefix "Royal" in honour of that event.

Resignation Correspondence

CORRESPONDENCE with the Minister of Transport surrounding the resignation of Sir Graham Cunningham as chairman of the Shipbuilding Advisory Committee (reported last week) has been made public. In his letter placing his resignation, Sir Graham says: "The Shipbuilding Advisory Committee, of which I have continuously been the independent chairman, was formed in March, 1946, to advise H.M. Government on all matters affecting the efficiency and stability of the shipbuilding industry. As I considered that there were obvious signs in early 1959 which threatened the stability of the industry, I suggested to the committee at its meeting on July 6, 1959, that special action should be taken by it to inquire what, if anything, should be done to assist the industry over the next few years. This suggestion was rejected by the committee. Again on October 29, 1959. . . . I renewed my suggestion. . . . On February 4, 1960, I once again raised this matter and suggested setting up a sub-committee to inquire into the state of the industry and to make recommendations. All the employee representatives were in favour of such a course. Although the shipowning representatives took no part in the discussion, they offered full co-operation in the event of such a sub-committee being set up.

"All the shipbuilding employer representatives wanted further deferment. The reasons given were:

(1) That owing to the recent transfer of the responsibility for the industry from the Admiralty to the Ministry of Transport the latter department really did not understand the shipbuilding industry.
(2) That there were several informal committees looking into the matter already.

"As to the first reason, I consider it has no foundation whatsoever and I have personal knowledge which enforces me in this conclusion. As to the second reason, I pointed out that the appointment of the sub-committee would consolidate the work of the unofficial committees to which they referred, which had no employee representatives on any of them, and of which I had no knowledge whatever. Still the employer representatives insisted on asking for deferment. I consider these excuses so frustrating that to continue serving the industry as independent chairman would be fruitless. . . ."

In his reply receiving the resignation "with much regret," Mr. Marples records his intention that the Permanent Secretary of the Ministry of Transport (Sir James Dunnett) should take over the chairmanship and also that he (the Minister) is arranging, with the concurrence of the representatives of both sides of the industry, that a special sub-committee should be set up to consider the future of the industry. This sub-committee will in that way carry out the inquiry which Sir Graham had in mind.

Japan and Eastern Conference

JAPANESE lines were expected to press for increased sailings at the general meeting of the Australian-Eastern Shipping Conference to be held in Sydney, starting last week, according to a N.Y.K. spokesman. He said that four shipping companies joining the conference, mainly British lines, had placed a total of about 75 sailings a year in the service while sailings by Japanese ships were limited to 36. The three Japanese lines in the conference are Nippon Yusen Kaisha, Osaka Shosen Kaisha and the Japan Australian Lines. The N.Y.K. spokesman said that volume of cargoes between Japan and Australia and with other countries in south-east Asia had increased, apparently following relaxation of import restrictions by Australia and New Zealand. Prospects of liberalisation of Japanese imports, including raw wool, had apparently had some effect. Fifty-two per cent of raw wool shipments to Japan from Australia were carried by non-Japanese ships. The Japanese request to the conference was expected to be mainly for an incrase in the percentage of wool shipments on Japanese vessels.

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FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

South Wales Transport

The dividend declared by the South Wales Transport Co., Limited, for 1959 is 6¼ per cent, tax free.

Rhondda Transport

A final dividend of 5½ per cent, making 7½ per cent, tax free, has been declared by the Rhondda Transport Co., Limited, for 1959. The net profit was £38,333 (£54,939) after tax of £38,800 (£24,600).

Singapore Traction

The ordinary dividend of the Singapore Traction Co., Limited, for the year ended September 30 is 4 per cent (5 per cent). Net profits were £34,511 (£84,816) after tax of £26,250 (£62,594) and depreciation of £127,189 (£113,037). The fall in profits is due to higher operating costs, particularly wages.

Pressed Steel Co Ltd

Manufacturers of Diesel and Electric Multiple Unit Stock

PRESSED STEEL COMPANY LIMITED
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Manufacturers also of motor car bodies, Prestcold refrigeration equipment and pressings of all kinds.

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